

**A STUDY ON  
DIAGNOSTIC METHODOLOGY IN  
PERU MANJAL NOI  
THROUGH SIDDHA PARAMETERS**

***Dissertation submitted to***  
**THE TAMILNADU Dr. M.G.R MEDICAL UNIVERSITY**  
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**DEPARTMENT OF NOI NAADAL  
GOVERNMENT SIDDHA MEDICAL COLLEGE  
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*for participating as a ~~Resource Person~~ / Delegate in the V Workshop on*

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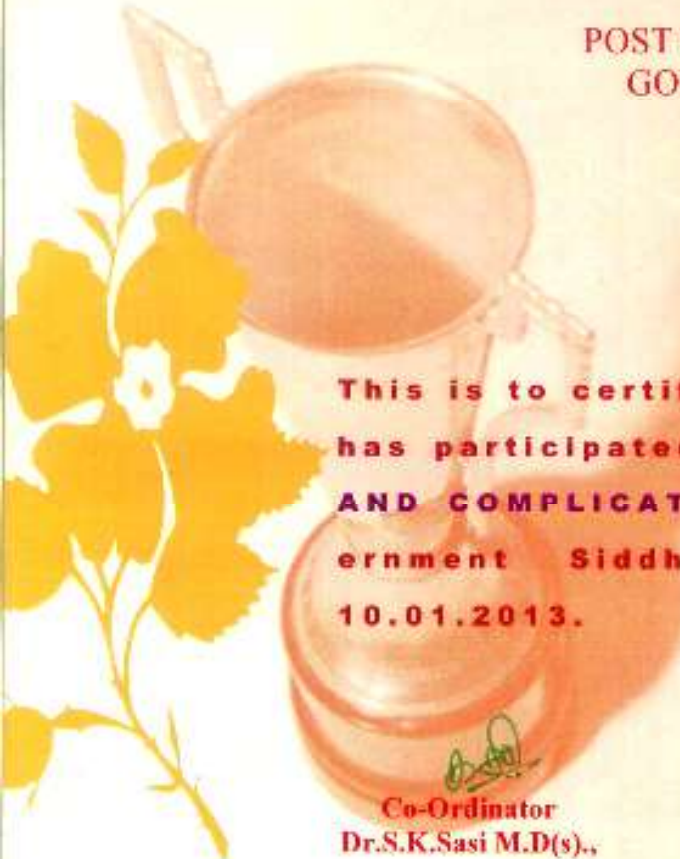
**HOD, DEPT. OF SIDDHA**

# CONTINUOUS MEDICAL EDUCATION PROGRAMME

CONDUCTED BY


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GOVERNMENT SIDDHA MEDICAL COLLEGE  
PALAYAMKOTTAI

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**CME on  
CHILD AND ADOLESCENT PSYCHOLOGICAL ISSUES**

Organised by

**TAMIL NADU Dr.M.G.R. MEDICAL UNIVERSITY, CHENNAI**

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## INTRODUCTION

The siddha system of medicine which defines the term Medicine as the one which cures the diseases of the physical body as well as the Mind , and also the uniqueness on which it stands is, the medicine has to prevent the diseases

“மறுப்ப துடல்நோய் மருந்தெனலாகும்

மறுப்ப துளநோய் மரந்தெனச்சாலும்

மறுப்ப தினிநோய் வாராதிருக்க

மறுப்பது சாவையு மருந்தெனலாமே”

- திருமூலர் திருமந்திரம்

Here the term “marundu” implies more to a medical system rather than a drug.

Siddha system is holding its base with its philosophy of “The things which are in the universe (macrocosm) are here in our human body (microcosm) too”. The human body is equal in its composition with that of the universe philosophically.

“ அண்டத்தில் உள்ளதே பிண்டம்

பிண்டத்தில் உள்ளதே அண்டம்”

- சட்டமுனி ஞானம்

So according to the changes in the Andam (macrocosm), the pindam (microcosm) also subject to the same changes in its internal environment in order to keep the philosophy in balance.

The Universe and the human body are made out of the ‘Five basic elements’ they are

1. Mann
2. Neer
3. Thee
4. Kaatru
5. Aagayam

Understanding “The pancha pootha thathuvam” along with other thathuvams of total 96 paves the way to know the Anatomy, physiology, Etiology, pathology and diagnosis of a disease through siddha system of medicine.

Finally the author confers the diagnostic methodology of “Peru manjal noi” by exploring siddha science through this dissertation study.

## SIDDHA PHYSIOLOGY

Siddha physiology provides the better meant for the maintenance of the normal equilibrium of the thathuvams, thereby keeping the physical body and mind in a Normal functioning state.

This involves the following in addition to the 96 Thathuvams

- |                   |   |                       |
|-------------------|---|-----------------------|
| 1. Udal Thathukal | - | 7 somatic compounds   |
| 2. Vegams         | - | 14 remedial functions |
| 3. Suvaigal       | - | 6 tastes              |
| 4. Udartee        | - | 4 body fire           |
| 5. Udal vanmai    | - | 3 immunities          |

### **Udal Kattukal 7- Constituents of the physical body.**

It plays a very important role in the development and nourishment of the body, they are as follows,

#### **1.Saram - chyle**

It consists of dietary nutrients from ingested food and nourishes all the tissues, organs and systems through the blood.

#### **2. Senneer – Blood**

It governs the oxygenation and suppling the saram to all the tissues and it is responsible for the nourishment, vigor, strength and colour of the body.



### **3. Oon - Muscle:**

It gives the bulky appearance and look able contour of the body, which is needed for the physical activity and also forms the basic skeletal structure of internal organs too. It also performs the movements of the joints and maintains the physical strength of the body.

### **4. Kozuppu - Fat:**

It maintains the lubrication of all tissues and gives energy, to the body.

### **5. Enbu – Bone**

Forms the basic skeleton of the physical body, it support and protect the organs and it is a fundamental requirement for posture and movement of the body.

### **6. Moolai – Bone marrow, Brain**

- Bone marrow nourishes the tissues of bone
- Brain is the central nervous system of the body

### **7. Sukkilam/suronitham**

Responsible for the reproduction and also provides strength to the human body.

### **Vegams – Reflexial Functions:**

Reflexes are essential for the normal function of the human body, they are

- |               |   |                    |
|---------------|---|--------------------|
| 1. Abana vayu | - | Downward force     |
| 2. Thummal    | - | Sneezing           |
| 3. Siruneer   | - | Micturition        |
| 4. Malam      | - | Defaecation        |
| 5. Kottavi    | - | Yawning            |
| 6. Pasi       | - | Hunger             |
| 7. Neervetkai | - | Thirst             |
| 8. Erumal     | - | Coughing           |
| 9. Elaippu    | - | Exhaustic veners   |
| 10. Thookam   | - | Sleep              |
| 11. Vanthi    | - | Vomiting           |
| 12. Kanneer   | - | Lacrimation        |
| 13. Sukkilam  | - | Genital Secretions |
| 14. Suvasam   | - | Breathing          |

### **Suvaikal Six Tastes:**

Suvai can be termed as a peculiar sensation caused by the contact of soluble substances with the tongue, each suvai has two boothams in it.

1. Sweet - Mann + Neer

Its primary actions are building tissues and calm the nerves.

2. Sour - Mann + Thee

It cleanses tissues, increases absorption of nutrients.

3. Salt - Neer + Thee

It improves taste to food, lubricates tissues, stimulates digestion

4. Bitter - vayu + Aagayan

It detoxifies and lightens tissues.

5. Pungent - Vayu + Thee

It stimulates digestion and metabolism

6. Astringent - Mann + Vayu

It absorbs water, tightens tissues and dries fats.

#### **UDAL AGNI – 4 Body Fires.**

The Agni - Azhal which is responsible for digestion and mediated through the samanavayu is called as Udal Agni. It is classified into 4 types.

1. Samaagni

2. Vishamaagni

3. Deesagni

4. Mandhagini

#### **Samaagni**

When the jadaragini is normal with the proper balance of the three Thathuvams then it, is called as samaagni. Here the balanced diet of an individual is properly digested in time.



### **Vishamaagni**

If the Udanavayu is mostly affected, it causes defect in digestion and make the food become poisonous, here the Agni is called as Vishamaagni.

### **Deesagni**

An increased prasagam with the deficiency of Kilethagam leads to this condition, causing excessive digestive fire, burning a larger quantum of food in a lesser duration.

### **Mandhagini**

An increased Kilethagam with the deficiency of prasagam causes this condition, in which food is poorly digested and the process of digestion takes a longer duration.

### **UDAL VANMAI – Three types of Immunity:**

1. Iyarkaivanmai - Innate immunity

The natural immunity against diseases of the body at birth

2. Seyarkai vanmai - Acquired immunity

Improving health by nutrients food activities and medicines.

3. Kalavanmai – Seasonal immunity.

Developing the immunity and stamina according to the age of the person, season and environment.

## SIDDHA PATHOLOGY

Siddha Pathology is a study of changes in the Uyir thathukal and Udal thathukal of the body in a diseased condition.

### **Basis of siddha pathology:**

According to siddha pathology, the human body is made of panchaboothams. This five basic elements exists in human body as uyir thathukkal. It is of 3 types namely Vali, Azhal and Iyam. These 3 essential humours are formed by the combination of

Idakalai + Abanan – Vali

Pinkalai + Piranam – Azhal

Suzhumunai + samanai – Iyam

This uyir thathukkal is functioning as

வாதமாய் படைத்து - Creation

பித்தவன்னியாய் காத்து - Protection

சேட்பசீதமாய் துடைத்து - Destruction

Uyir thathukkal are responsible for udal thathukkal. These basic structures of the body system are interlinked with one another. Any alterations in this basic form results in disease

## Noi – disease

### Synonyms

Pini, varutham, Thunbam, Accham, Vinai, Urogam, sugavenam, Viyathi, Asowkiyam, thathuthoda Verupadu.

According to Siddha Noi (disease) is again defined as

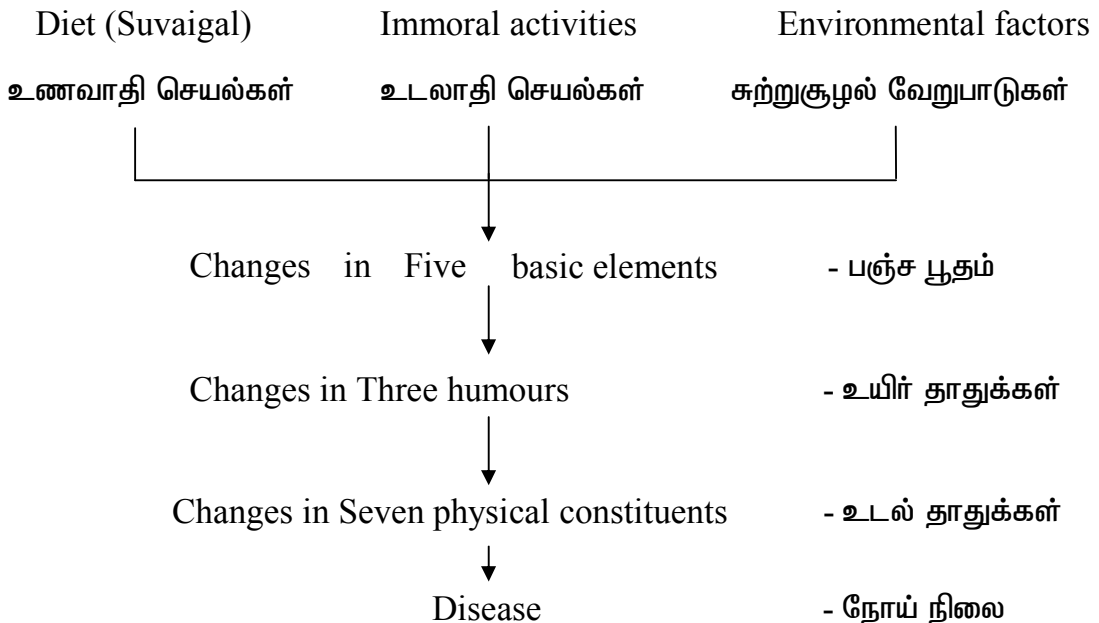
உடலுடன் பிணைந்த உயிர் அனுபவிக்கும் இன்ப உணர்ச்சிக்கு மாறான உணர்ச்சியே பிணி எனப்படுகிறது.

நோய் என்பது ஸ்தூல சூக்கும சரிரங்களாகிய சப்த தாதுக்களும், வளி, தீ, ஐய மாகிய முக்குற்றங்களும் தம் தம் இயற்கைத் தன்மையினின்று வேறுபடும் போது நோய் எனப்படும்.

.

Various factors are responsible for occurrence of disease such as changes in dietic factors, physical activities, and environmental factors.

This is quoted in the following schematic form.



The changes in the any of the above basic structures forms the pathology of the disease

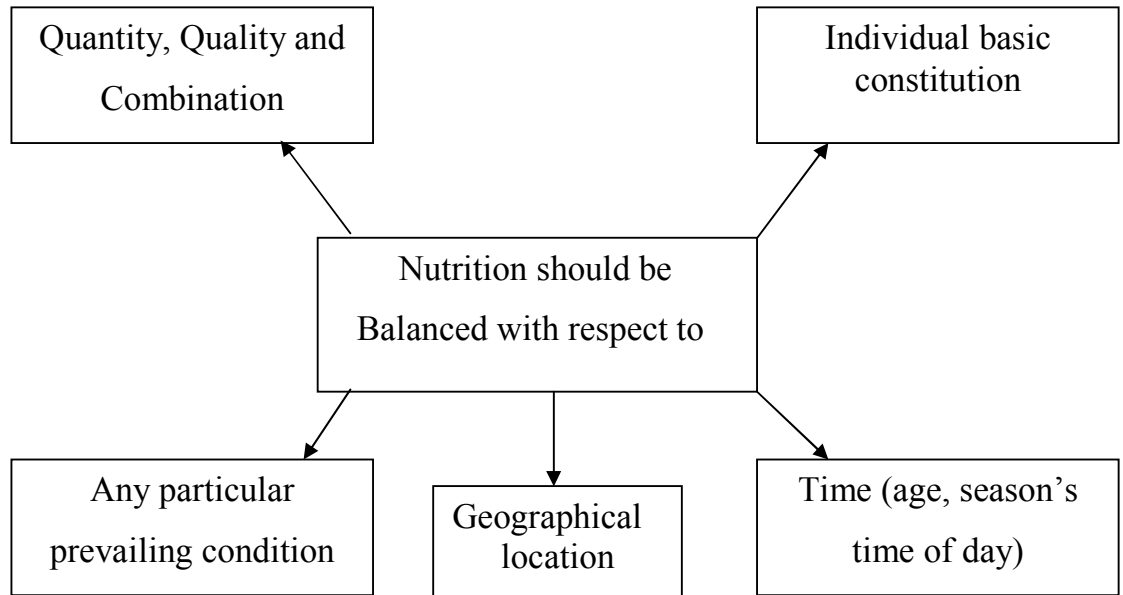
### **I. Variations in the intake of diet:**

Any material that provides the nutritive requirements of an organism to maintain growth and physical well – being is called as food.

Food comprises six suvaikal in appropriate proportion. Suvaikal are formed by the combination of panchapootham, which are responsible for the uyirthathu and seven udalthathukal.

In ‘THIRUKKURAL” the following quotations are given regarding food and food habits.

“மஹுபர டில்லாத வுண்டி மறுத்துண்ணி  
ஹுபர டில்லை வயிர்க்கு



An alteration in the normal, regular diet will produce changes in the proportion of the suvaikal resulting in diseases.

Arusuvai – Uyirthathu – Udalthathu – Noi

Excessive intake of a particular suvai may produce hyper activeness of the concerned poothams and develops some clinical manifestations. They are given below.

**Table 2:**

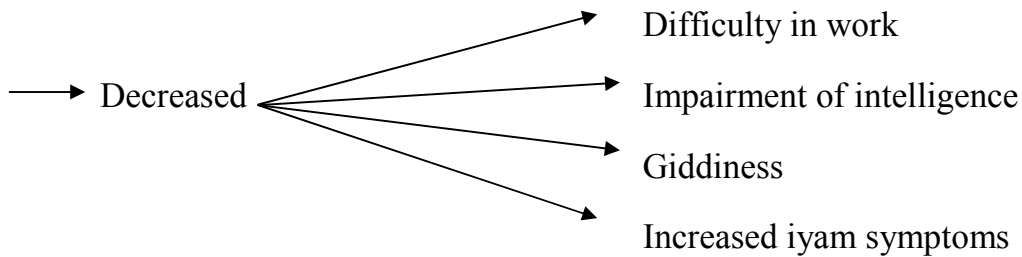
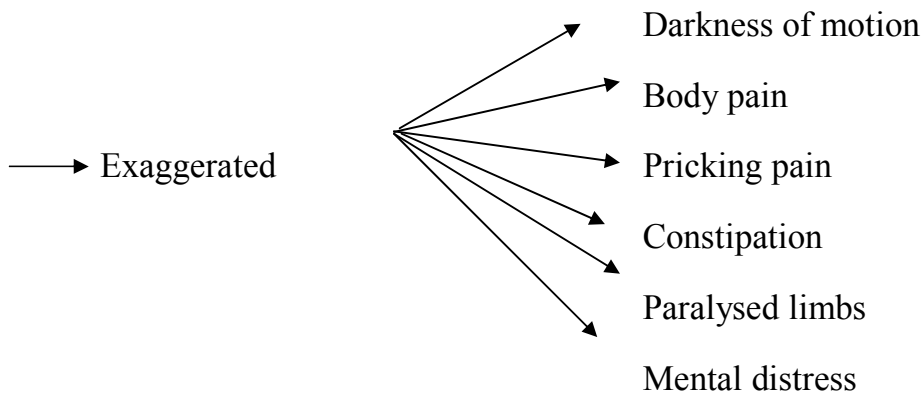
S.No.	Tastes	Diseases due to high intake
1.	Enippu	Develops obesity, excessive fat, increased mucous secretion, indigestion, diabetes, cervical adenitis, increased kabam and its diseases
2.	Pulippu	Develops nervous weakness, dull vision, giddiness, anemia, dropsy, dryness of tongue, acne, blisters etc.
3.	Uppu	Ageing, hair loss, leprosy, dryness of tongue, debility
4.	Kaippu	Increased dryness of tongue, defected Spermatogenesis, body weakness, dyspnoea lassitude, tremor, back and hip pain.
5.	Kaarppu	Dryness of tongue, generalized malaise, tremor, back pain, lassitude etc.



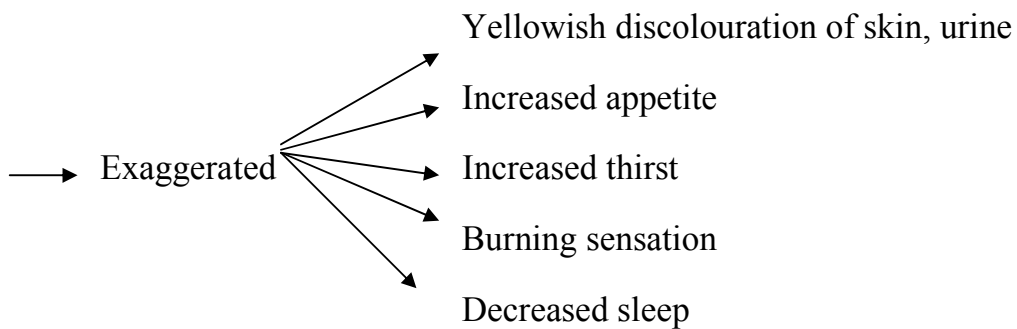
6.	Thuvarppu	Abdominal discomfort, chest pain, tiredness, impotency, vascular constriction, constipation, dryness of tongue etc.
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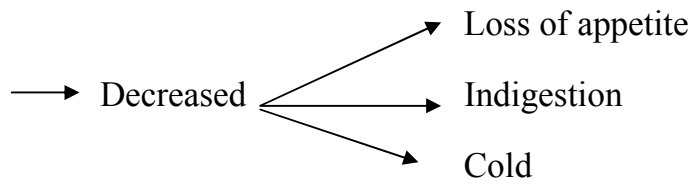
### De-Arrangement of 3 humours:

#### 1. Vali – Thodam:

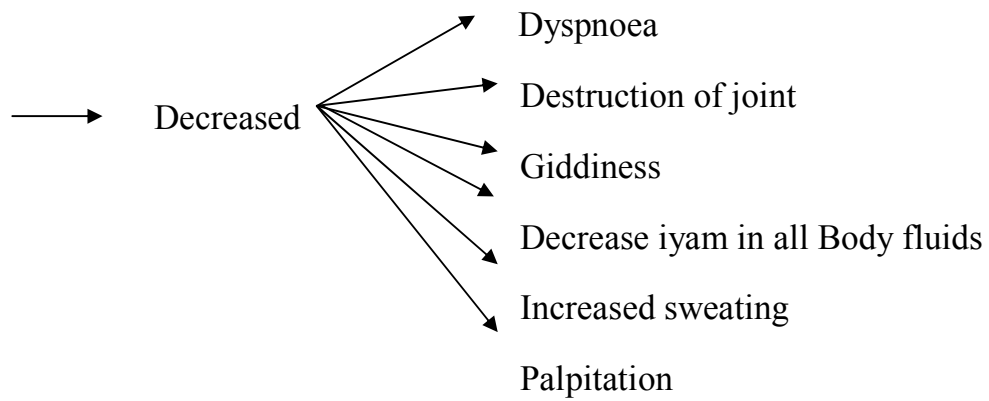
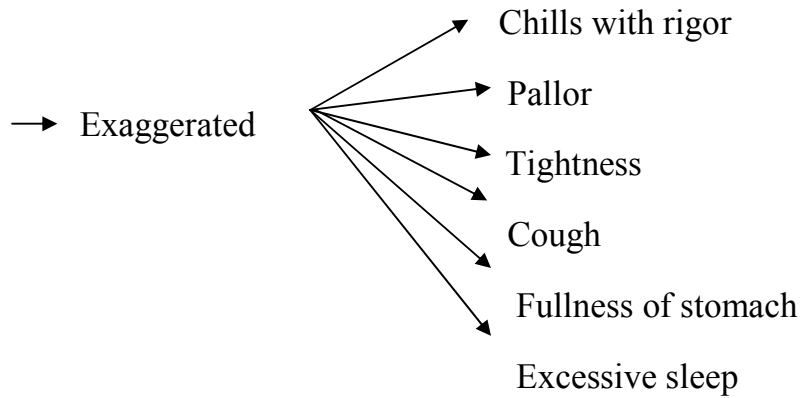


#### 2. Azhal thodam





### 3. Iyam thodam



### III. Alterations in udalthathukkal

**Table 3:**

<b>S.No.</b>	<b>Udal thathukkal</b>	<b>Increased features</b>	<b>Decreased features</b>
1.	Saaram	Loss of appetite, excessive salivation, heaviness, decreased physical constituents, dyspnoea, cough, flatulence.	Dryness of skin, tiredness, loss of weight, less ability in hearing.
2.	Senneer	Boils in different parts of the body, spleenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy,jaundice	Affinity to sour and cold, dryness, pallor
3.	Oon	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh, genitalia	Lethargic sense organs, pain in the joints, muscle wasting in chin, gluteal region, penis and thigh
4.	Kozuppu (fat)	Identical features of increased oon, dyspnoea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen, and thigh	Loin pin, spleenomegaly, emaciation

5.	Enbu (Bone)	Excessive ossification and dentition	Joint pain, falling of teeth, falling and splitting of hairs and nails.
6.	Moolai (bone marrow)	Heaviness of body and eye, swollen interphalangeal joints, oliguria, non – healing ulcers.	Osteoporosis, blurred vision.
7.	Sukkilam (or) suronitham	Increased sexual activity, urinary calculi	Dripping of semen, vaginal fluid, pricking pain in the scrotum, inflamed and contused external genitalia

#### IV.Environmental changes:

**Table 4: Seasonal changes of humours**

Humour	↑	↑↑	N
Vali	Mudhuvenil kaalam	Kaarkaalam	Koodhirkalam
Azhal	Kaarkaalam	Koodhirkalam	Munpanikalam
Iyam	Pinpanikalam	Elavenil kalam	Mudhuvenil kalam

↑Thannilai valarchi.

↑↑piranilai valarchi.

N - thannilai adaithal.

**b.Regional changes of humours:**

Kurinji	-	Kabha diseases
Mullai	-	Pitha diseases
Neythal	-	Vadha diseases
Marutham	-	No disease will occur
Paalai	-	Any disease can easily affect

**V. Effects on self – suppression of 14 vegams**

Reflexes are essential for the normal physiology when there is any self suppression to those reflexes, that will lead to the pathological state.

<b>Vegankal</b>	<b>Diseases</b>
1.Vadham	- Heart diseases, gastritis, umbilical hernia, body pain, liver disorder, constipation, oliguria, loss of appetite.
2.Thummal	- Head ache, defect of special sensory organs and its activities, pain over the face, hip joint pain.
3. Siruneer	- Anuria, urethral ulcer, gas formation in the abdomen.
4. Malam	- Diarrhoea, flatulence, knee pain.
5. Kottavi	- urinary disorders, leucorrhoea, associated with schizophrenia, abdominal diseases.

- 6. Pasi - pricking pain all over the body, emaciation, apathetic face, painful joints
- 7. Neer - Same as that of pasi
- 8. Erumal - Increased cough, bad breath, heart disease
- 9. Elaippu - urinary disorder, syncope, rigor, peptic ulcer.
- 10. Thookkam - Heaviness of head, pain in the eyes, deafness
- 11. Vaanthi - Rashes, anemia, itching, eye diseases, asthma, fever, cough
- 12. Kanneer - Heart diseases, eye diseases, wounds in the scalp, upper respiratory disorders.
- 13. Sukkilam - fever, anuria, joint diseases of upper and lower limbs, acute chest pain
- 14. Swasam - cough, epigastric pain, venereal diseases

### **DIAGNOSTIC METHODS:**

Diagnosis is the mandatory process in the treatment of a patient. Envagai thervugal which is the unique and special method having a broad and important role in diagnosing a particular diseases. It is based upon the principles of poriyaal arithal, pulanaal arithal and vinaathal.

Poriyaal arithal means understanding by the five organs of perception, nose, tongue, eyes, skin and the ears.

Pulanaal arithal means understanding by the sense objects smell, taste, vision, somatic sense and sound.

Vinaathal means interrogating the patient, learning the history and symptoms of the disease by asking questions to the patient.

**Envagai thervugal:**

"மெய்க்குறி திறந்தொனி விழிநா விருமலம் கைக்குறி

-தேரையர்

1. Examination of tongue (நா)
2. Examination of complexion (நிறம்)
3. Examination of voice (மொழி)
4. Examination of eyes (விழி)
5. Examination of faeces (மலம்)
6. Examination of urine (மூத்திரம்)
7. Examination of pulse (நாடி)
8. Examination of touch (ஸ்பரிசம்)

By interrogation feeling, seeing the symptoms and signs are heard and examined. After examining, it must be compared, excluded and at last the final diagnosis is to be arrived.

**Naa**

It reflects the disease and so it gains importance in examining. The tongue is seen for the colour, shape, size, coating, fissures, growth, surfaces, sensations of taste and also salivary secretion

**Niram**

The normal colour of each humoral body is explained. If there is any change from normal (ie) colour of eyes, tongue, mucous membrane, any erythema, hypo (or) hyper pigmentation in the skin, they are dealt under this section.

**Thoni**

This not only explains the tone of speech but also the changes in modulations, pitch, sound, fluency, stammering, difficulty in articulation, repetition, listening, answering speech, associated with breathing difficulties etc.

**Vizhi**

The view on one's eyes stretches all sides. It deals about the vision changes such as loss of vision, blurred vision, changes in visual perception, movements of eye lids & eye balls, colour of conjunctiva and growth lacrimation, dryness, contractions, congenital defects are also specified under this examination.

**Malam**

The metabolic end product of our food after completing its work of supplying energy is expelled from the body as faeces. And thus any change in the colour, consistency, frequency, amount and components of motion exhibit the disease.



## Moothiram

Urine plays an important role in revealing the diseased state in the form of changes in colour, specific gravity, odour, frequency, froth and deposits.

“வந்த நீர்க்கறிஎடை மணம் நுரை எஞ்சலென்  
ரைந்திய லுளவை யறைகுது முறையே”

-தேரையர் நீர்க்குறி நெய்க்குறி நூல்

## Neikuri

“அருந்துமறிரதமும் அவினோ தமதாய்  
அ:கல் அலர்தல் அகலவன் தவிர்ந்தமுற்  
குற்றளவருந்தி உறங்கி வைகறை  
ஆடிக்கலசத் தாவியே களது பெய்  
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்  
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே:

-தேரையர் நீர்க்குறி நெய்க்குறி நூல்

This is an unique and special methodology in determining the diseases. The early morning first voided urine is taken in a glass bowl. A drop of gingelly oil is let into its surface. It forms many shapes due to the surface tension exhibited by the urine. If there is any change in the body metabolism, there will be alterations in the components of urine and thus the surface tension depicting various structures.

Vali diseases – Rays of snake (பாம்பை போல் நீண்டல்)

Azhal diseases – As a ring (மோதிரம் போல்)

Iya Disease – Stands as a pearl (பரவாமல் முத்துபோல்)

### **Naadi**

It is a special diagnostic entity and felt in the radial artery with the three fingers, fore finger (Vali), middle finger (Azhal) and ring finger tips (Iyam). Ratio is 1:1/2:1/4 respectively it serves as a good indicator of all ill health. It has been considered for assessing the prognosis and diagnosis of a disease.

### **Mei**

It deals all about the changes in the skin (i.e.) tactile sensation, the warmth, the chillness, sweat, numbness, fissures, plaques, papules, ulcers, inflammation etc.

Basically, siddha aims to maintain the equilibrium between the five elements despite out constant interaction with the outer world. The five elements which work as 3 vital forces in body and perform all physical and mental functions are constantly affected by time, space and nutrition.

It is regarding a sound knowledge of noi – naadal is essential to formulate therapeutic measures for various ailments.

## **AIM AND OBJECTIVES**

### **AIM**

To evaluate the significance of siddha parameters in the diagnosis of the disease “Peru Manjal Noi”.

### **OBJECTIVES**

- To establish the review of literature.
- To establish the etiopathogenesis of “Peru Manjal Noi” through siddha science.
- To study the clinical course of the disease “Peru Manjal Noi” with clear observation on the aetiology, pathology clinical features and diagnosis.
- To document and analyse the patterns of Ennvagai thervugal in the disease “Peru Manjal Noi”.
- To document the pattern of manikadai nool in the disease “Peru Manjal Noi”.
- To support the study by using necessary modern parameters.

## பெரு மஞ்சள் நோய்

“விவரமாய் மூத்திரந்தான் மஞ்சளாகும்

வீங்குமே சரீரமெங்கு மெலிவுண்டாகும்

விபரமாய் முகங்கால்கண் கையுண்ணாக்கு

மொழி மஞ்சள் நிறமாகும் முகமினுக்கும்

அபரமாய் யன்னத்தை யிறங்கொட்டாது

அழகையாய் மனஞ்சலிக்கும் மூச்சுண்டாகும்

தபரமாய்த் தாதுநட்ட மலமும் பந்தஞ்

சுந்ந்த மஞ்சட் காமாலைத் தண்பேராமே”

-யூகி வைத்திய சிந்தாமணி

மூத்திரந்தான்	-	சிறுநீர்	-	Urine
மஞ்சளாகும்	-	மஞ்சள் நிறமாதல்	-	Yellowish colouration
வீங்குமே	-	ஏக்கம் கொள்ளுதல்,	-	( a craving )
சரீரமெங்கும்	-	உடல் எங்கும்	-	whole body
மெலிவுண்டாகும்	-	களைப்பு	-	(Lassitude)
முகம்	-		-	face
கால்	-	உள்ளங்கால்	-	foot
கண்	-	விழி	-	conjunctiva
கை	-	உள்ளங்கை	-	palm of the hand
உண்ணாக்கு	-	மேல்நாக்கு (அ) உள் நாக்கு.	-	soft palate,uvula
		உள்ளாகவிருக்கும் நாக்கு அதாவது அடிநாக்கு – The		
		Hinder part of the tongue (Tamil – English		
		Dictionary Vol – II T.V Sambasivam Pillai)		
மொழி	-	நாக்கு	-	Tongue

முகமினுக்கும்	-	முகம் + மினுக்கும் - Shining of face
மினுமினுப்பு	-	சிலேட்டும தொழிலினுள் உடம்பிற்கு ஏற்பட்ட ஓர் நிலைமை. Good luster caused Phlegm humour in the body. (Tamil – English Dictionary Vol – II T.V
அன்னத்தை இறங்கொட்டாது	-	Loss of appetite.
அழுகையாய்	-	இரங்குதல், வருத்துதல் weeping, tenderness
மனஞ்சலிக்கும்	-	மனமலுத்தல், disgust of mind.
மூச்சுண்டாகும்	-	மூச்சுவாங்கல் - (Dyspnoea on exertion )
தாது நட்டம்	-	தாது சிதைவு - Reduced amount of body humours.
மலமும் பந்தஞ்	-	மலபந்தனம் - மலக்கட்டு Constipation

**பெரு மஞ்சள் நோய் குறிகுணங்கள்:-**

- 1) சிறுநீர் மஞ்சளித்து காணல்- yellowish discoloration of urine.
- 2) கண் மஞ்சளித்து காணல்- yellowish discoloration of conjunctiva.
- 3) நாக்கு (மொழி) மஞ்சளித்து காணல்- yellowish discoloration of ventrum of tongue.
- 4) உடல் முழுவதும் களைப்பு (மெலிவு) காணல்- Lassitude.
- 5) உள்ளங்கால், கை மஞ்சளித்தல்- yellowish discoloration of hand and foot.
- 6) உண்ணாக்கு மஞ்சளித்தல் - yellowish discoloration of soft palate.
- 7) அன்னத்தை இறங்கொட்டாது-Loss of appetite/ indigestion.
- 8) மல பந்தம்-Constipation.
- 9) தாது நட்டம்- Reduced amount of Body humors.

## SIDDHA ASPECT

### PERUMANJAL NOI

Perumanjal Noi otherwise called as Manjal Kamalai is one of the 13 types of Kamalai is explained in “Yugi Vaidya Sinthamani” Under Kamalai roga nithanam.

Synonyms:

1. Pithu Noi : So called due to involvement of bile fluid in the clinical entity.
2. Kamalai : Kamam + Illai – Desirelessness  
Patient becomes desireless to do his normal activity.
3. Manjal Noi : So called because of yellowish discolouration of the body.

#### Definition:

Perumanjal Noi is mainly characterized by yellow discolouration of sclera, conjunctivae, tongue, palm, sole, skin and yellow coloured urine.

Manjal Kamalai is defined in T.V. Sambasivam Pillai Dictionary Vol.

V as follows:

“அக்கினி மந்தித்து அன்னம் ஒழித்து  
கண், நீர் மஞ்சளித்து கரணும் நேரய”.

Here the samakini decreases and leads to indigestion, finally developing the disease through yellowish discolouration of eyes and urine.

Yugi Vaidya Chinthamani as follows:

“விளம்பவே பாண்டு முற்றியிருக்கும் போது  
மீறியே பித்த வஸ்துதனை புசிப்பதால்  
புலம்பவே மங்கையுடன் புணர்ச்சி செய்தால்  
பூண்டிடுமே காமாலை யெனும் ரோகம்”.

Yugi says that those who previously suffered from Anaemia can get “Kamalai” when they take more Pitha foods.

Agasthiyar Gunavagadam, explains that one of the aetiological factors of Manjal Noi, is the one who suffering from chronic constipation (Malapantha rogam), may get in to Manjal Noi.

“கேளடா சோம்பலா யிருப்பவர்களும்  
கேடியான மலந்தன்னை அடக்குவேர்க்கும்  
நாளடா உட்கர்ந்து வேலை செய்யும்  
நலமான தொழிலாளி தனக்கு மப்பா  
தேனடா இந்த நோயுண்டாம் பாரு  
திரியான மலபந்தத் தேரடு கூட  
வாளடா பசியற்று போடுமப்பா  
வளமான நாக்குந்தான் வெளுத்துப் போம்”

In Chikitcha Ratna Deepam, Agasthiyar describes Perumanjal Noi as the Pitha disease.

“ஆமே தான் அஸ்திகரம் பாண்டு சோகை  
ஆழலான விடாகரம் பிரமேகந்தான்  
போமே தான் காமாலை பித்த வெட்டை  
பொல்லாத பாண்டுடனே சிவந்த நீராய்  
தேமே தான் சிவப்பாயும் மஞ்சளாயும்  
சிறுசிறுத் திருண்டு கருங்குழி விழுந்து  
நாமேதான் சொல்லுவொமே பித்தக்கூறு  
நவின்றிட்டார் வாச முனி நவின்றிட்டாரே”.

### Prodromal Signs and Symptoms

“பருகவே உள்ளங்கா லுள்ளங் கைகள்  
பகர் முகங்கண் ணுடம்புமிக வெளுப்பு  
கருகவே கால்கைக ளோய்ச்ச லாகுங்  
கனமாக நடுக்கிய இளைப்புண் டாக்கும்  
சுரகவே மலந்தானும் வறண்டு கட்டுந்  
தூயமுக மஞ்சளித நிறம தாகும்  
வெருகவே வீக்கமாய் களைப்புண் டாகும்  
மிகக்காது மந்தந்தலை களைப்புண் டாகும்”

-யுகி வைத்திய சிந்தாமணி

1. Pallor of palm, sole, face and body
2. Lassitude
3. Shivering
4. Dyspnoea



5. Dry stools and constipation
6. Yellow discolouration of face
7. Oedema
8. Fatiguability
9. Generalised tiredness
10. Heaviness of head.

Premonitorily nausea, bitter taste, hatredness towards food, indigestion, dry skin and later produces yellowish discolouration of the conjunctivae, nails, face, urine and the body.

**In Agasthiyar 2000, the general signs and symptoms are explained as follows:**

“வீழுமே நீரும் மஞ்சளாமாய் வீங்கு முகமுங் காலுடனே  
அழுமே கண்ணும் மஞ்சளிக்கும் அசனமிறங்க வொட்டாது  
முழுமேனி காயமஞ்சளிக்கும் முகமும் வேர்க்கும் காலோயும்  
முகமும் வீங்கிக் கண் வெளுத்து மூச்சு நடக்கில் முட்டதுவாய்  
அகமுந்தடித்து நாவரண்டு அணுகுந்தாது கெட்டிருக்கும்  
மிகவும் அசனஞ் செல்லாது மேனி வரண்டு வெளுப்பேறுஞ்  
செகமே சொன்னோங்காமாலை செய்யுங் குணங்களிவை கண்டாய்”

1. Yellow coloured urine.
2. Oedema of lower extremities and face.
3. Yellow discolouration of conjunctivae.
4. Loss of appetite

5. Sweating of face.
6. Lassitude.
7. Yellow discolouration of the entire body.
8. Pallor of eyes.
9. Dryness of exertion.
10. Dryness of tongue.
11. Dryness of body and pallor of the body.

## **MODERN MEDICAL ASPECT**

### **ANATOMY OF LIVER**

The Liver, the largest organ in the body, weighs 1.2kg – 1.5kg and comprises one fiftieth of the total body weight. It is situated in the right upper quadrant of the abdominal cavity, reddish brown in colour, firm in consistency. It has 5 surfaces namely superior, inferior, anterior, posterior and right surfaces.

It is divided into largest right lobe and smaller left lobe by the attachment of falciform ligament and fissures for ligamentum teres and venosum. Quadrate lobe, is situated on the inferior surface and caudate lobe is situated on the posterior surface.

The liver is almost completely covered by peritoneum except for large triangular area of the posterior surface of the right lobe know as 'bare area'. Ligaments attached to the liver are falciform ligament, caronary ligament, left triangular ligament and lesser omentum.

Liver has dual blood supply. The portal vein brings the venous blood from the intestines and the spleen and the hepatic artery coming from the coeliac trunk supplies the liver with arterial blood. These vessels enter the liver through a fissure, called porta hepatis.

The nerve supply of the liver is the hepatic nerve plexus, which contains fibres from both sympathetic ganglia. T-7 to T-10 which synapse in the coeliac plexus, the right and left vagi and the right phrenic nerve.

Lymphatic vessels drain and terminate in small groups of glands around porta hepatis. Efferent vessels drain into glands around coeliac axis. Some superficial hepatic lymphatics drain into mediastinal glands.

## **HISTOLOGY**

The microscopic anatomy is very important to understand the pathological changes in the liver. Glisson's Capsule sends innumerable number of septi. So the liver is divided into millions of lobules. In the centre of the lobules will be the central vein. All the central veins drain into hepatic veins. Hepatic veins joins inferior vena cava. From the central vein the liver cells are radiation on all sides called chords of liver cells. Portal triad is formed by portal vein, hepatic artery and bile duct. The adjacent parts of 3 hepatic lobules will be called as portal lobule.

## **BILIARY SYSTEM**

The biliary tract begins in the biliary canaliculi which are integral parts of the hepatocytes, and the intra hepatic bile ducts derived from them progressively to form the right and left hepatic ducts. These ducts join, as they emerge from liver after about 5cm, it is joined by the cystic duct from the gall bladder, and continues downwards as the common bile duct which

opens into the second part of the duodenum on a small papilla where it is also joined by pancreatic duct.

### **FUNCTIONS OF LIVER:**

The liver is a great metabolic factory and carries out a variety of functions. These functions can be classified as follows:-

#### **a) Metabolic:**

Liver maintains the blood sugar level steadily by the processes of glycolysis, glycogenesis, gluconeogenesis. It also metabolises the amino acids and transforms them into protein groups and undertakes deamination and transamination to convert one type of food material into another. Liver helps in the oxidation of fat, releasing energy in the form of ATP. Synthesis of cholesterol from acetate and fat from carbohydrates and proteins takes place in the liver. The liver also plays a key role in the metabolism of hormones, bilirubin, porphyrin, bile salts and many drugs.

#### **b) Formation of protein material:**

Liver forms plasma proteins like albumin and fibrinogen, and also forms prothrombin and heparin which are vital for the process of coagulation.

**c) Storage:**

The liver is the storehouse for iron and fat soluble vitamins.

**d) Detoxication:**

The liver convert toxic substances to non toxic substances by the process which includes oxidation, hydrolysis, conjugation, and reduction.

The detoxified products are excreted either in the faces or urine. Foreign bodies from blood are removed by kupffer cells. The liver enzymes plays a major role in detoxification of drugs.

**e) Reticulo endothelial function:**

The functions of the liver include the activities of about 15% of its cells which are not hepatocytes. Foremost amongthese are the kupffer cells derived from blood monocytes, which have important immunological functions. They constitute the largest single mass of mononuclear phagocytes in the body and account for about 80% of the phagocytic capacity of this system.

**f) Excretory functions:**

Some heavy metals are temporarily fixed by the liver cells which are then excreted in the bile. Some of the toxins, bacterias, drugs, cholesterol and bile pigments are exceted in the bile.

**g) Heat regulation:**

The liver produces a large amount of heat and takes part in the heat regulation.

#### **h) Formation of bile:**

The liver secretes 1-2 litres of bile daily as a continuous process.

The bile is taken by the hepatic duct and is stored in the gall bladder.

Bile is clearly golden yellow liquid. It is slightly viscous and tastes bitter.

During digestion, gall bladder contracts to supply bile to the intestines via the common bile duct. The bile mixes with the pancreatic juice and exerts influence on the digestion of fats of food. Formation of bile by the liver is an active process.

#### **Composition of human bile:**

	<b>Hepatic Bile %</b>	<b>Gall bladder Bile %</b>
Water	97	86
Solids	3	14
Bile Salts	0.9-1.8	9
Mucin and bile pigment	0 – 5	3
Lecithin and fat	0.02 - 0.99	0.5 – 1.0
Cholesterol	0.06 – 0.16	0.2
Inorganic Salts	0.7 – 0.8	0.8
pH of Bile	8 – 8.6	Neutral or slightly alkaline

**Functions of Bile:**

1. Digestion of fats, Proteins, Carbohydrates.
2. Bile helps in the absorption of fat, vit A,D,E,K, Iron and Calcium.
3. Excretion of
  - a) Bile pigments, b) cholesterol and Lecithin, c) Metals like Cu, Zn, Mercury d) Toxins and Bacteria.
4. Laxative action
5. Cholagogue action
6. Maintains suitable pH of the duodenal contents.
7. Mucin of bile acts as a buffer and lubricant.

**Bile acids:**

Bile acids are the end products of cholesterol catabolism in the body. They are eliminated via bile. Dietary fats are mechanically emulsified in the stomach by the bile acids. Primary bile acids are cholic acid and Chenodeoxy cholic acid. Secondary bile acids deoxy cholic acid and litho cholic acid.

**Bile Salts:**

Cholic acid and chenodeoxy cholic acid are conjugated in the liver with either glycine or taurine through peptide linkages forming bile. Acid glyco cholic ad taurocholic acid respectively. They then combine with Sodium, Pottasium present in the bile and form water soluble bile salts namely Sodium glycocholate and Sodium taurocholate. Bile salts facilitate

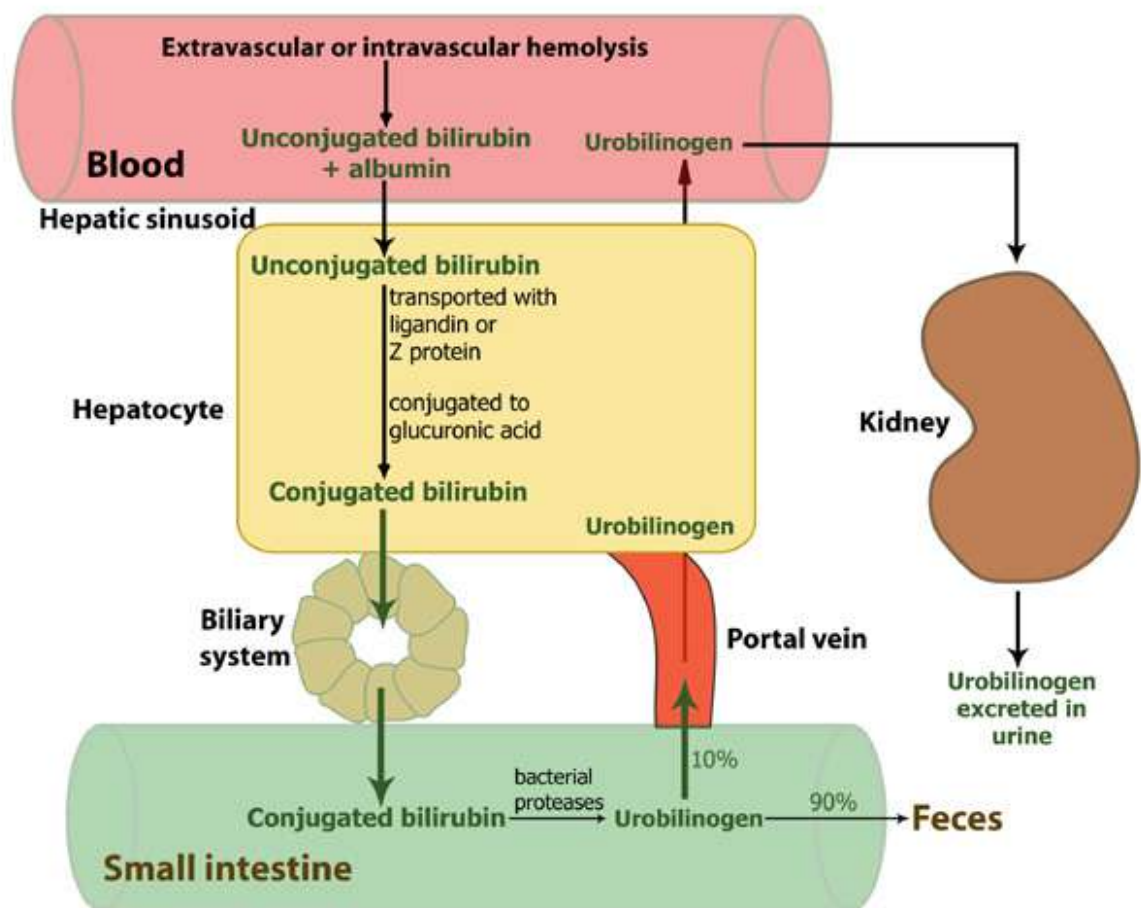


digestion of fats and Cholesterol absorption. Bile salts as a stimuli increases the flow of greater volume of bile.

### **Bile pigments:**

A number of pigments are present in the bile. The two main pigments are bilirubin and biliverdin. Abnormalities in the formation, conjugation, circulation and excretion of bile pigments leads to jaundice. Bile pigments undergo oxidation and has the property to form azodye.

### **BILIRUBIN METABOLISM:**



It may be divided into three steps.

- 1) Uptake
- 2) Conjugation
- 3) Excretion

Bilirubin is derived from the catabolism of hemoglobin. Hemoglobin derived from the break down of erythrocytes after their normal life span of 120 days. This takes place in the red bone marrow. Two enzymes involved in the transformation of heme to bilirubin. The first, heme oxygenase, splits the porphyrin ring to form biliverdin, which is then reduced by a reductase to bilirubin. Bilirubin is transported in the plasma, bound to albumin in a molar ratio of 2 to 1. The next step is conjugation of each molecule with two molecules of glucuronic acid by enzyme Uridine diphosphoglucuronyl transferase (udpgt) in the smooth endoplasmic reticulum. The final product is bilirubin diglucuronide which is secreted into the bile canaliculus. The biliary excretion is transported via the biliary tree into the duodenum. Within the colon and the terminal ileum, bilirubin is reduced by bacterial enzymes to a group of compounds called urobilinogen. 80% to 90% of urobilinogen is oxidized to Urobilin (Stercobilin) and is excreted in the faeces. The remainder is reabsorbed into the portal circulation and returned to the liver, constituting the so called enterohepatic circulation, while some is excreted by the kidneys.

## **JAUNDICE**

### **DEFINITION**

Jaundice (icterus) is the condition to the yellow discolouration of the skin, sclerae and mucous membranes resulting from an increased bilirubin concentration in the body fluids. It is detectable when plasma bilirubin exceeds 3mg/dl.

It may occur due to the following

### **CAUSES**

1. Excessive production of bile pigments, beyond the capacity of normal liver to excrete it.
2. Obstruction in normal excretory passages of the bile in the liver or outside the liver before reaching the duodenum.
3. Dysfunction of the liver cells, resulting in failure to excrete the normal amounts of bilirubin produced.

Based on the pathology, Jaundice may be classified into:

1. Hemolytic Jaundice
2. Hepatocellular Jaundice
3. Obstructive Jaundice.

### **Hemolytic Jaundice (Pre hepatic Jaundice):**

Excessive hemolysis due to increased destruction of erythrocytes causes excessive formation of unconjugated bilirubin which circulated in the

blood and enters the liver resulting in the formation of increased amount of conjugated bilirubin. Large amount of urobilinogen from the intestines via portal circulation reach the liver which is not able to convert the excess urobilinogen to bilirubin. Therefore, the excess urobilinogen escapes into circulation.

### **Clinical features**

Jaundice is usually mild. The serum bilirubin is less than 6 mg/dl. There is increased bilirubin excretion lead to increased stercobilinogen and stercobilin, so the stools are dark yellow in colour, and urine is deep yellow. Pallor due to anameia; splenomegaly due to excessive reticulo endothelial cell action. The liver function tests other than serum bilirubin are normal.

### **Obstructive Jaundice**

Obstructive Jaundice occurs when there is obstruction in passage of bile preventing the flow of bile into gall bladder and intestines. The conjugated bilirubin after leaving the liver may get blocked. Failing to get excreted in the normal path way, it regurgitates into the stream, after getting absorbed into the hepatic veins and lymphatics. Conjugated bilirubin being free from proteins passes through the glomeruli and gets excreted in the urine in increased amount, giving the urine a deep yellow or brownish colour.

**Causes:-****a) Extra hepatic**

1. Inflammatory - Stone, stricture, Parasites, Acute cholecystitis.
2. Neoplastic - Carcinoma of the head of pancreas, neoplasm of bile ducts, gall bladder or ampulla of vater, metastatic tumours, involvement of commonbile duct in duodenal ulcer.
3. Congenital biliary atresia.

**b) Intra hepatic**

1. Cholestatic- phase of infective hepatitis.
2. Drugs - Steroids, P.A.S, Sulpha, Tolbutamide, Methyltestosterone, Alcohol etc. Hodgkin's Lymphoma, Primary biliary cirrhosis, Pericholangitic of ulcerative colitis, Wide spread carcinoms in the liver.

**Clinical features**

Prolonged persistant jaundice. Skin is greenish appearance. Stools are pale or clay coloured due to absence of stercobilinogen and steatorrhea, urine is dark due to renal excretion of conjugated bilirubin.

Some patients have generalised intense pruritus, anorexia, metallic taste in the mouth. There may be upper abdominal pain occurs particularly in large duct obstruction by a gall stone or pancreatic carcinoma. Fever with rigor suggests cholangitis occurs most common with gall stone obstruction. A

palpable gall bladder strongly suggests large duct obstruction by pancreatic carcinoma and very large irregular liver suggest carcinoma liver.

**Hepatocellular Jaundice (Toxic and infective Jaundice):**

Infective hepatitis is most familiar example. There is inflammation and damage to the liver parenchymal cells which in turn are unable to convert the urobilinogen into bilirubin. So the excess urobilinogen finds its way into general circulation and gets excreted in the urine. Continuous action of the virus, the hepatic cells become more and more swollen as to cause obstruction of the tiny bilecanaliculis. There is also defect in conjugation process. The infective hepatitis out in epidemic form and spreads rapidly mainly by faecal contamination of the water supply.

**Causes:**

1) Infection:

- Viral hepatitis
- Yellow fever
- Malaria

2) Poisons

Arsenic, alcohol, chloroform, carbon tetra chloride.

3) Deficiency of specific food factors.

Methionine, choline, Cystine.

Icterus gravis in infants (Jaundice in newborn)

After blood transfusion (Virus B).

**Latent Jaundice:**

Sometimes as in pernicious anaemia, the bilirubin may be above normal but below the amount necessary to produce clinical jaundice. This is known as latent jaundice. Serum bilirubin level is 1 -2 mg/dl.

**Lab investigations:**

- Increased Serum Bilirubin level.
- Increased serum SGOT, SGPT level.
- Anti HAV, HEV antibodies and Hbs Ag Australia antigen
- ESR level.
- Bile salts and Bile pigments in urine.

**DIFFERENTIAL DIAGNOSIS OF JAUNDICE**

	<b>Hepatocellular</b>	<b>Intrahepatic cholestasis</b>	<b>Extrahepatic obstruction</b>
<b>1) Common causes</b>	Viral hepatitis, Spirochetal, Jaundice	Viral hepatitis, drugs, biliary cirrhosis	Biliary stones, carcinoma of pancreas, carinoma of bile duct
<b>2) Age</b>	More in the young	Any age	Above 40 years
<b>3) Duration of Jaundice</b>	Less than 3 Months	Usually less than 3 months	After more than 3 months
<b>4) Itching</b>	May be present	Common	Common
<b>5) Colour of faeces</b>	Slightly pale	Pale	Very pale (clay coloured)

<b>6) Jaundice</b>	Mild to moderate	mild to moderate deep	very deep in the later stages
<b>7) Pain</b>	Mild discomfort	Nil	Colicky pain in the gall
<b>8) Liver</b>	Tender and slightly enlarged	Variable	Enlarged and firm in long
<b>9) Gall bladder</b>	Not palpable	Not palpable	Palpable in many cases of carcinoma head of pancreas and in some cases of bile duct obstruction
<b>10) Bilirubin</b>	total and direct high	Total and Direct high	Total and Direct very high
<b>11) Serum cholestrol</b>	Normal	Raised	Markedly raised
<b>12) Cephalin cholestrol</b>	2 to 4+	1 to 2 +	1+ in the early stages
<b>13) Alkaline phosphatase (KA Units)</b>	10 to 15/ dl	Over 15/ dl	Over 3/ dl
<b>14) Transaminases</b>	Markedly increased	Moderately increased	Over slightly increased in early stages.
<b>15) Obstruction to major bile ducts</b>	Nil	Nil	Present



### Clinical differentiation of the types of jaundice

Clinical features	Haemolytic	Hepatocellular	Obstructive
1) Depth of jaundice	Usually mild	Variable	Usually deep
2) Pruritus	absent	Variable	Present
3) Bradycardia	absent	Absent	Present
4) Anemia	present	Absent	absent
5) Splenomegaly	present	Variable	absent
6) Palpable gall Bladder	absent	Absent	may be present
7) Bleeding tendency	absent	present	present in the late stages
8) Features of Hepatocellular failure	absent	present (early)	present (late)

### Detection of Bile Pigments and Urobilinogen in Urine

	Haemolytic	Hepatocellular	Obstructive
Bilepigment	absent	present	excessive
Urobilinogen	excess	present, may be in excess	absent

## PATHOLOGICAL VIEW OF PERU MANJAL NOI

Peru manjal noi is one of the types of manjal noi which is said by saint yugi munivar under kamalai Roga Nithanam in his YUGI VAITHYA SINTHAMANI.

### Types of Manjal Noi :

“உரைக்கவே ஊதுகாமாலை யோடு  
ஊயர்ந்தவறும் காமாலை வாதக்காமாலை  
புரைக்கவே பித்தகா மாலை யோடு  
பேரான சிரேட்டும காமாலை யாகும்  
வரைக்கவே வாத சிலேட்டும காமாலை  
வகையான பித்தசிலேட் டுமக்காமாலை  
துரைக்கவே தொந்தகா மாலை யோடு  
சூட்சுமமா மஞ்சட்கா மாலை யாமே”

“மஞ்சளா மழுகா மாலை யோடு  
மருவுகின்ற செங்கமலக் காமாலை யாகும்  
குஞ்சலங் கும்பகா மாலை யோடு  
கோடிய குன்மக் காமாலை பதின்மூன்றாகும்”.

- யுகி வைத்திய சிந்தாமணி.

1. ஊதுமஞ்சள் நோய்
2. வறள் மஞ்சள் நோய்
3. வளி மஞ்சள் நோய்
4. அழல் மஞ்சள் நோய்
5. ஐய மஞ்சள் நோய்
6. வளி ஐய மஞ்சள் நோய்

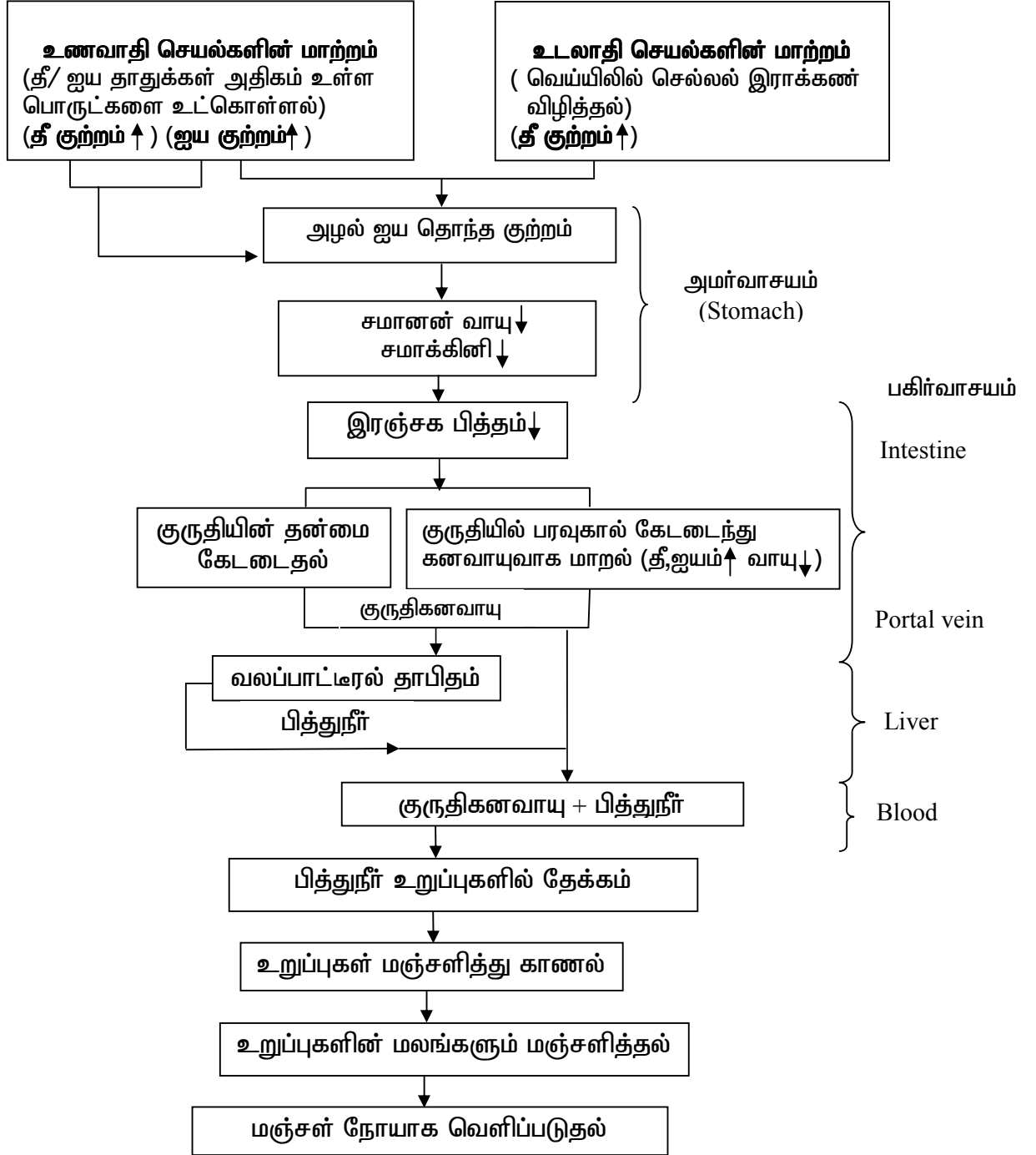
7. அழலைய மஞ்சள் நோய்
8. முக்குற்ற மஞ்சள் நோய்
9. மாமஞ்சள் நோய் - பெரு மஞ்சள் நோய் - PERUMANJAL NOI
10. அழகு மஞ்சள் நோய்
11. செங்கமல மஞ்சள் நோய்
12. கும்ப மஞ்சள் நோய்
13. குன்ம மஞ்சள் நோய்

#### **CAUSES OF MANJAL NOI**

1. Intake of food which triggers the AZHAL KUTTRAM.
2. Intake of food which triggers the IYA KUTTRAM.
3. Excessive intake of food.
4. Indigestion
5. Exposure to excessive sunlight
6. Awakening at night time.

- நோய் நாடல் நோய் முதல் நாடல் திரட்டு – II

## PATHOGENESIS



- உறுப்புகள் மஞ்சளித்து காணப்படும் இடங்கள், இயற்கையில் பித்தம் வாழக்கூடிய இடங்களேயான

- செந்நீர்
- சாரம்
- கண்
- தோல்
- நாவில் ஊறும் நீர்
- வியர்வை

## உயிர் தாதுக்களின் நிலை

### வளி

1. பிராணன் - பிராணன் குறைவதால், மூச்சு வாங்குதல், உடல் சோர்வு, உணவு செரியாமை, பெரு மஞ்சள் நோயில் தோன்றுகிறது. (Dyspnoea, lassitude and indigestion)
2. அபாணன் - அபாணன் தன் அளவில் குறைவதால் மலக்கட்டு உண்டாகிறது. உணவை சேர வேண்டிய இடங்களில் சேர்க்காமல் உடல் சோர்வு காணப்படுகின்றது. (Constipation)
3. வியானன் - பரவுகால் கேடடைந்து, தன்மையில் கனவாயுவாக மாறி உறுப்புகளில் பித்துநீரை தேக்கம் அடையசெய்கின்றது. (Yellowish discolouration of eyes, mucus, skin, urine)

4. உதானன் - உதானன் தூண்டப்படுவதால் அதிவாய்நீர்  
சுரத்தல், வாய்குமட்டல், மூச்சுவாங்கல்  
காணப்படுகின்றது. (Nausea, Dyspnoea)
5. சமானன் - சமானவாயு கேடடைந்து உணவை சரிப்பிக்கும்  
ஆற்றல்குறைந்து காணப்படுகின்றது. (Indigestion)
6. கிருகரன் - கிருகரன் தூண்டப்படுவதால் நாவின் கசிவு  
அதிகரித்து காணப்படுகின்றது. (Increased altered  
salivation and Anorexia)
7. கூர்மன் - கூர்மன் தூண்டப்படுவதால் கண்களில் அதிநீர்  
சுரக்கக் காரணமாகின்றது. (Increased lacrimation)

## அழல்

### 1. அனற்பித்தம்: (ANAR PITHAM)

பெருமஞ்சள் நோயில் அனல்பித்தம் பாதிப்படைவதால் செரிமானத்திற்கு  
தேவையான சமாக்கினி குறைந்து உணவை சரிவர செரிப்பதில்லை.  
(Indigestion)

### 2. இரஞ்சக பித்தம்: (RANJAGA PITHAM)

இரஞ்சக பித்தம் வன்மை குறைவதால் உணவில் இருந்து பிரித்த சாரத்திற்கு  
செந்நிறம் அளிப்பது பாதிப்படைகின்றது. (Anaemia)

### 3. பிராசகபித்தம்: (PRASAGA PITHAM)

பிராசகபித்தம் வன்மை கேடடைவதால்தோலின் ஒளி குன்றி வறண்டோ,  
குகரணமாக மினுமினுத்தோ காணப்படுகின்றது. (Yellowish discolouration  
in localised areas like eyes, mucus membrane and skin).

#### 4. சாதகப்பித்தம்: (SAATHAGA PITHAM)

சாதகப்பித்தம் குறைவதால் பெருமஞ்சள் நோயில், எச்செயலிலும் காமம் இன்மை, நிறைவேற்றும் ஆற்றல் குறைகின்றது. (Lassitude, Tiredness to plan or execute a work).

#### ஐயம்

##### 1. கிலேதம்: (KILETHAM)

கிலேதம் குற்ற அளவாக அதிகரித்து, இரைப்பையில் நீர்த்துவம் பெருக்கி உணவு செரிமானத்தை குறைக்கின்றது. (Indigestion)

##### 2. போதகம்: (POTHAGAM)\

போதகம் குற்ற அளவாக குறைந்து நாவில் சுவையை அறிவிக்கும் ஆற்றலை குறைத்து இதன்செயலாலும் பசித்தீயை குறைக்கின்றது. (Anorexia)

##### 3. தற்பகம்: (THARPAGAM)

தற்பகம் குறைவதால், கண்களில் எரிச்சல் தோன்றுகிறது. (Burning sensation in eyes).

## உடல் தாதுக்களின் நிலை

1. சாரம் - அனற்பித்தம் குறைவதாலும், கிலேதம் அதிகரிப்பதாலும் சாரம் இயற்கை தன்மையில் இருந்து கேடடைந்து நிலையில் உடலில் சென்றடைகின்றது. (Fatigue)
2. செந்நீர் - கேடடைந்த சாரத்தாலும், இரஞ்சக பித்தம் வன்மை குறைவதாலும் பித்துநீர் சேர்வதாலும் செந்நீர் கேடடைகின்றது. (Anaemia & Bilepigments in blood)
3. ஊன் - பிராணனும், வியானனும் பாதிப்படைந்து, ஊனை வருத்தி உடல் சோர்வு காணப்படுகின்றது. (Lassitude)
4. கொழுப்பு - பிராசகபித்தம் கேடடைவதால் கொழுப்பு தன் அளவில் பாதித்து தோலில் வறட்சியோ, மினுமினுப்போ காணப்படுகின்றது. (Dryness or shining of skin)



## **MATERIALS AND METHODS**

The clinical study on “Peru manjal Noi” has been taken in the post graduate department of Noi Naadal.

The screening was done in 24 cases, of them 20 cases were included in the study under the supervision of faculties and head of the department of P.G.NoI Naadal department.

### **Evaluation of clinical parameters:**

The detailed history and clinical features are documented carefully.

#### **History:**

- 1). Family history
- 2). Community history
- 3). History of Diet and personal activities.
- 4). Socio-economic status

### **Documentation of Clinical Features of “Peru Manjal Noi”**

It is carried out on the basis of interpretation of the following siddha diagnostic principles.

- 1). Poriyal arithal
- 2). Pulanal arithal
- 3). Vinaadhal
- 4). Changes in uyir thathukkal
- 5). Changes in udal thathukkal
- 6). Ennvagai thervugal
- 7). Manikalai nool

**Clinical features of “Perumanjal noi” as said in “Yugi Vaithya Sinthamani”**

1. Yellowish discolouration of urine
2. Yellowish discolouration of face, conjunctiva, tongue and soft palate.
3. Glistening of the face
4. Anorexia
5. Mental depression
6. Dyspnoea
7. Reduced amount of body humours
8. Constipation

**Modern parameters:**

For further detailed study of the disease, modern parameters were used in investigation.

**Routine blood investigations:** TC, DC, ESR, HB, Blood sugar, serum cholesterol.

Serum Bilirubin Total, Direct and indirect  
Anti HAV, HEV antibodies. Hbs Ag  
(Hepatitis – B surface antigen).

Liver function test.

**Urine :** Albumin, Sugar, Deposits – Bile pigments  
Bile salts.

**TABLE - 1 AGE**

<b>Sl.No.</b>	<b>Age</b>	<b>No. of Cases</b>	<b>Percentage</b>
1.	< 33 yrs	10	50
2.	33 – 66yrs	10	50
3	>66yrs	-	-

Out of 20 cases 50% of them in kabam and pitha kalam of life span.

**TABLE – 2 SEX**

<b>Sl.No.</b>	<b>Sex</b>	<b>No. of Cases</b>	<b>Percentage</b>
1.	Male	14	70
2.	Female	6	30

Out of 20 cases 70% male are affected.

**TABLE – 3 SOCIO ECONOMIC STATUS**

<b>Sl.No.</b>	<b>Socio economic status</b>	<b>No. of Cases</b>	<b>Percentage</b>
1.	High class	2	10
2.	Middle class	7	35
3	Below povertyline	11	55

Out of 20 cases 55 % are below poverty line

**TABLE – 4    DIET HABITS**

<b>Sl.No.</b>	<b>Diet</b>	<b>No. of Cases</b>	<b>Percentage</b>
1.	Foods inducing Azhal & Iyam	20	100
2.	Activites increasing Azhal kuttram	20	100

All the cases having the history of intaking foods inducing Azhal & Iyam and activites increasing Azhal kuttram.

**TABLE – 5. STATUS OF UYIR THATHUKAL  
VALI**

SL. NO.	OP. NO.	Pranam	Abanam	Vyanam	Uthanan	Samanan	Kirugaran	Koormam
1	18241	A	A	A	A	A	A	A
2	47491	A	A	A	A	A	A	A
3	59780	A	A	A	A	A	A	A
4	50439	A	A	A	A	A	A	A
5	68857	A	A	A	A	A	A	A
6	76919	A	A	A	A	A	A	A
7	76920	A	A	A	A	A	A	A
8	80909	A	A	A	A	A	A	A
9	81474	A	A	A	A	A	A	A
10	83681	A	A	A	A	A	A	A
11	83972	A	A	A	A	A	A	A
12	83973	A	A	A	A	A	A	A
13	84865	A	A	A	A	A	A	A
14	84866	A	A	A	A	A	A	A
15	85144	A	A	A	A	A	A	A
16	87939	A	A	A	A	A	A	A
17	87940	A	A	A	A	A	A	A
18	96487	A	A	A	A	A	A	A
19	85145	A	A	A	A	A	A	A
20	78195	A	A	A	A	A	A	A

All the cases (100%) shows affected Pranan, Abanan, Vyanan, Uthanan, Samanan, Kirugaran and Koorman vayus.

None of the cases shows affected Nagan, Thevathathan and Thananseyan vayus.

**Table -6**

SL. NO.	OP. NO.	AZHAL				IYAM		
		ANILAM	RANJAGAM	SAATHAGAM	PRASAGAM	KILETHAGAM	POTHAGAM	THARPAGAM
1	18241	A	A	A	A	A	A	A
2	47491	A	A	A	A	A	A	A
3	59780	A	A	A	A	A	A	A
4	50439	A	A	A	A	A	A	A
5	68857	A	A	A	A	A	A	A
6	76919	A	A	A	A	A	A	A
7	76920	A	A	A	A	A	A	A
8	80909	A	A	A	A	A	A	A
9	81474	A	A	A	A	A	A	A
10	83681	A	A	A	A	A	A	A
11	83972	A	A	A	A	A	A	A
12	83973	A	A	A	A	A	A	A
13	84865	A	A	A	A	A	A	A
14	84866	A	A	A	A	A	A	A
15	85144	A	A	A	A	A	A	A
16	87939	A	A	A	A	A	A	A
17	87940	A	A	A	A	A	A	A
18	96487	A	A	A	A	A	A	A
19	85145	A	A	A	A	A	A	A
20	78195	A	A	A	A	A	A	A

All the cases (100%) have affected Anarpitham, Ranjagam, Saathagam and Prasaga pitham

All the cases (100%) have affected Kilethagam, Pothagam and Tharpagam

None of the Cases were affected Alosaga pitham. Avalambagam and Santhigam

**TABLE – 7. STATUS OF UDAL THATHUKAL**

<b>SL. NO.</b>	<b>OP. NO.</b>	<b>Saram</b>	<b>Senneer</b>	<b>Oon</b>	<b>Kozhupu</b>
1	18241	A	A	A	A
2	47491	A	A	A	A
3	59780	A	A	A	A
4	50439	A	A	A	A
5	68857	A	A	A	A
6	76919	A	A	A	A
7	76920	A	A	A	A
8	80909	A	A	A	A
9	81474	A	A	A	A
10	83681	A	A	A	A
11	83972	A	A	A	A
12	83973	A	A	A	A
13	84865	A	A	A	A
14	84866	A	A	A	A
15	85144	A	A	A	A
16	87939	A	A	A	A
17	87940	A	A	A	A
18	96487	A	A	A	A
19	85145	A	A	A	A
20	78195	A	A	A	A

A - Affected

100% of cases affected with Udal thathus - Saram, Senneer, Oon and Kozhuppu

**TABLE – 8. NAA**

<b>SL. No.</b>	<b>OP. NO.</b>	<b>MAPADITHAL (COATING)</b>	<b>NIRAM</b>	<b>VAINEER (Salivation)</b>
1	1824	P	Y	I
2	47491	P	Y	I
3	59780	A	Y	I
4	50439	A	P	N
5	68857	P	Y	I
6	76919	P	Pi	N
7	76920	A	Pi	N
8	80909	P	Y	I
9	81474	P	Pi	N
10	83681	A	Y	I
11	83972	A	Y	I
12	83973	P	Y	I
13	84865	P	Pi	N
14	84866	P	Pi	N
15	85144	P	Y	I
16	87939	A	Y	N
17	87940	A	Pi	N
18	96487	A	Pi	N
19	85145	P	Pi	N
20	78195	A	Pi	N
Total		Present 11 Absent 9	Yellow 10 Pink 10	Increased 9 Normal 11
Percentage		Present 55% Absent 45%	Yellow 50% Pink 50%	Increased 45% Normal 55%

A – Absent. 55% cases have coated tongue

P- Present. 50% cases have yellow discolouration in the ventrum of tongue

Y- Yellow. 45% cases showed increased salivation.

Pi- Pink, I – Increased, N - Normal



**TABLE – 9.            NIRAM**

<b>S.No</b>	<b>OP No</b>	<b>Yellowish colour change in the skin</b>
1	18241	P
2	47491	P
3	59780	A
4	50439	A
5	68857	A
6	76919	A
7	76920	A
8	80909	A
9	81474	A
10	83681	A
11	83972	P
12	83973	A
13	84865	A
14	84866	A
15	85144	P
16	87939	A
17	87940	A
18	96487	A
19	85145	A
20	78195	A

P- Present    A- Absent

Out of 20 cases 20 % have Yellowish discolouration over the skin.

Any other abnormality seen over the skin

**TABLE – 10. MOZHI**

SL. NO.	OP. NO.	Low Pitched (Thazhnthi oli)	Medium Pitched (Sama oli)
1	1824	P	A
2	47491	P	A
3	59780	P	A
4	50439	P	A
5	68857	P	A
6	76919	P	A
7	76920	P	A
8	80909	P	A
9	81474	A	P
10	83681	P	A
11	83972	P	A
12	83973	P	A
13	84865	A	P
14	84866	A	P
15	85144	P	
16	87939	A	P
17	87940	A	P
18	96487	P	A
19	85145	P	A
20	78195	A	P
Total		Present 14 Absent 6	Present 6 Absent 14
Percentage		Present 70 Absent 30	Present 30 Absent 70

P - Present      A - Absent

Out of 20 cases 70% have low pitched sound and 30% have medium pitched sound.

**TABLE – 11.****VIZHI**

<b>SL. No.</b>	<b>OP. NO.</b>	<b>Colour of Conjunctive (Niram)</b>	<b>Lacrimation (Neerthuvam)</b>	<b>Burning Sensation (Erichchal)</b>
1	1824	Y	I	P
2	47491	Y	I	P
3	59780	Y	N	P
4	50439	Y	I	P
5	68857	Y	I	P
6	76919	Y	I	P
7	76920	Y	I	P
8	80909	Y	I	P
9	81474	M Y	N	P
10	83681	Y	I	P
11	83972	Y	I	P
12	83973	Y	I	P
13	84865	M Y	N	A
14	84866	M Y	N	P
15	85144	Y	I	P
16	87939	M Y	N	A
17	87940	M Y	N	P
18	96487	M Y	N	P
19	85145	Y	I	P
20	78195	M Y	N	P
<b>Total</b>		Yellow 13 Mild Yellow 7	Increased 12 Normal 8	Present 18 Absent 2
<b>Percentage</b>		Yellow 65 Mild Yellow 35	Increased 60 Normal 40	Present 90 Absent 10

MY – Mild Yellow, Y- Yellow, I-Increased, N-Normal P – Present A - Absent

Out of 20 cases 65% have yellow discolouration and 35 % have mild yellow discolouration in conjunctiva

Out of 20 cases 60% have increased lacrimation and 40% have normal lacrimal secretion

Out of 20 cases 90% have burning sensation in the eye.

**TABLE – 12.****NAADI**

<b>SL. NO.</b>	<b>OP. NO.</b>	<b>PITHA KABAM</b>	<b>PITHA VATHAM</b>
1	1824	A	P
2	47491	A	P
3	59780	A	P
4	50439	A	P
5	68857	A	P
6	76919	A	P
7	76920	A	P
8	80909	A	P
9	81474	P	A
10	83681	P	A
11	83972	A	P
12	83973	A	P
13	84865	P	A
14	84866	P	A
15	85144	A	P
16	87939	P	A
17	87940	P	A
18	96487	P	A
19	85145	A	P
20	78195	P	A
Total		Present 8 Absent 12	Present 12 Absent 8
Percentage		Present 40 Absent 60	Present 60 Absent 40

P – Present    A – Absent

Out of 20 cases 60% showed pithavatham and 40% showed pitha kabam

Naadi, No other forms of Naadi were noted.

**TABLE – 13.****MEI (Sparism)**

SL. NO.	OP. NO.	VEPPAM (warmth)	VIYARVAI (Sweating)
1	1824	I	I
2	47491	I	I
3	59780	I	I
4	50439	I	I
5	68857	I	I
6	76919	I	I
7	76920	I	I
8	80909	I	I
9	81474	N	N
10	83681	N	N
11	83972	I	I
12	83973	I	I
13	84865	N	N
14	84866	N	N
15	85144	I	I
16	87939	N	N
17	87940	N	N
18	96487	N	N
19	85145	I	I
20	78195	N	N
Total		Increased 12 Normal 8	Increased 13 Normal 7
Percentage		Increased 60 Normal 40	Increased 65 Normal 35

I - Increased

N - Normal

OF all cases

60 % have increased warmth on the skin

40% have normal warmth on the skin

65% have increased sweating

35 % have normal sweating

**TABLE – 14.****MALAM**

<b>SL. NO.</b>	<b>OP. NO.</b>	<b>No. of times per day</b>	<b>Quantity</b>	<b>Colour (Niram)</b>	<b>Constipation</b>	<b>Loose Stools</b>
1	1824	1	R	DY	P	A
2	47491	2	R	DY	P	A
3	59780	2	R	Y	P	A
4	50439	1	N	Y	P	A
5	68857	2	R	Y	P	A
6	76919	3	R	DY	P	A
7	76920	2	R	Y	P	A
8	80909	1	N	DY	P	A
9	81474	1	N	Y	P	A
10	83681	1	N	Y	P	A
11	83972	2	N	DY	P	A
12	83973	2	R	Y	A	P
13	84865	1	N	Y	P	A
14	84866	2	R	Y	P	A
15	85144	1	R	DY	P	A
16	87939	3	N	Y	P	A
17	87940	2	N	Y	P	A
18	96487	1	N	Y	A	P
19	85145	1	R	DY	P	A
20	78195	1	R	Y	A	P
Total			Normal 9 Reduced 11	Dark Yellow 7 Yellow 13	Present 17 Absent 3	Absent 17 Present 3
Percentage			Normal 45 Reduced 55	Dark Yellow 35 Yellow 65	Present 65 Absent 35	Absent 65 Present 35

DY – Dark Yellow, Y- Yellow, R-Reduced, N-Normal P – Present A - Absent

Out of 20 cases 35% had dark yellow coloured stools and 65% had yellow coloured Stools

Out of 20 cases 65% developed constipation and 35% developed loose stools

**TABLE – 15. NEER KURI**

SL. NO.	OP. NO.	COLOUR	Odour (Aromatic)	Specific gravity	Froth	Deposit Bilesalt Pigment
1	18247	X	P	1.045	A	P
2	47491	X	P	1.046	A	P
3	59780	Y	P	1.036	A	P
4	50439	Y	P	1.03	A	P
5	68857	Y	P	1.027	A	P
6	76919	Y	P	1.038	A	P
7	76920	Y	P	1.035	A	P
8	80909	X	P	1.038	A	P
9	81474	Y	P	1.037	A	P
10	83681	Y	P	1.04	A	P
11	83972	Y	P	1.039	A	P
12	83973	Y	P	1.36	A	P
13	84865	Y	P	1.39	A	P
14	84866	Y	P	1.42	A	P
15	85144	X	P	1.049	A	P
16	87939	Y	P	1.038	A	P
17	87940	Y	P	1.042	A	P
18	96487	Y	P	1.044	A	P
19	85145	Y	P	1.039	A	P
20	78195	Y	P	1.039	A	P
Total		Reddish Yellow 4 Yellow 16	P-Present 20		A-Absent 20	P - Present 20
Percentage		Reddish Yellow 20 Yellow 80	Present 100		Absent 100	Present

X –Redish yellow, Y-Yellow

80 % of cases have Yellow colouration and 20 present have Reddish Yellow colouration of Urine

100% of cases have Aromatic order in Urine.

100% of cases showed bilesalts and bile pigments in urine.

None of cases showed frothy urine

**TABLE – 16.****NEI KURI**

<b>SL. No.</b>	<b>OP. NO.</b>	<b>Rounded Slow Spread (Melaparaval)</b>	<b>Rounded Fast Spread (Virainthu paraval)</b>	<b>Sieve like appearance</b>
1	1824	A	P	P
2	47491	A	P	P
3	59780	P	A	P
4	50439	A	P	P
5	68857	A	P	P
6	76919	P	A	P
7	76920	P	A	P
8	80909	A	P	P
9	81474	P	A	A
10	83681	P	A	A
11	83972	A	P	P
12	83973	A	P	P
13	84865	P	A	A
14	84866	P	A	A
15	85144	A	P	P
16	87939	P	A	A
17	87940	P	A	A
18	96487	P	A	A
19	85145	A	P	A
20	78195	P	A	A
<b>Total</b>		Present 11 Absent 9	Present 9 Absent 11	Present 11 Absent 9
<b>Percentage</b>		Present 55 Absent 45	Present 45 Absent 55	Present 55 Absent 45

P – Present    A - Absent

Out of 20 cases 55% have showed rounded slow spread pattern and 45% have showed Rounded fast spread pattern "Neikuri"

Out of 20 cases 55% have showed sieve like appearance in neikuri

Out of 11 with sieve pattern cases 85% have showed rounded fast spread pattern followed by sieve pattern and 15% have showed rounded slow spread pattern followed by sieve pattern.



**TABLE – 17. MANIKADAI NOOL**

<b>S.No</b>	<b>OP No</b>	<b>Manikadai nool</b>
1	18241	9
2	47491	8 1/2
3	59780	8 1/4
4	50439	8 3/4
5	68857	7 1/2
6	76919	8
7	76920	7 3/4
8	80909	7 1/2
9	81474	9 3/4
10	83681	9 1/2
11	83972	8 1/2
12	83973	9
13	84865	9
14	84866	10
15	85144	9 1/2
16	87939	9 3/4
17	87940	8
18	96487	8 3/4
19	85145	7 3/4
20	78195	9

An uneven distribution of Manikadai nool were seen.

**Table No : 18      LIVER FUNCTION TEST****VIRAL MARKERS**

S.NO.	OP NO.	Serum Bilirubin mg%			SGOT V/L	SGPT	Anti HAV antibody	Anti HEV antibody	HBs Ag.
		Total	Direct	Indirect					
1	18241	12.9	7.7	5.2	79	102	Positive	Negative	Negative
2	47491	9.0	5.20	3.80	59	250	Positive	Positive	Negative
3	59780	5.0	3.1	2.9	98	127	Positive	Negative	Negative
4	50439	5.3	2.8	2.7	70	148	Positive	Negative	Negative
5	68857	6.3	3.7	2.6	211	298	Negative	Positive	Negative
6	76919	4.2	3.1	1.1	105	35	Negative	Positive	Negative
7	76920	5.9	3.7	2.2	43	97	Positive	Negative	Negative
8	80909	7.2	4.1	3.1	62	112	Positive	Positive	Negative
9	81474	6.0	0.9	5.1	57	154	Negative	Positive	Negative
10	83681	7.0	3.3	3.7	111	89	Positive	Negative	Negative
11	83972	7.8	3.8	4.0	102	90	Positive	Negative	Negative
12	83973	6.9	4.8	2.1	49	67	Negative	Positive	Negative
13	84865	4.3	3.3	1.0	98	87	Positive	Negative	Negative
14	84866	3.9	2.7	1.2	121	37	Positive	Negative	Negative
15	85144	13.0	5.3	7.7	78	121	Positive	Negative	Positive
16	87939	4.9	3.2	1.7	68	97	Positive	Negative	Negative
17	87940	4.0	3.0	1.0	50	69	Negative	Positive	Negative
18	96487	3.7	2.5	1.2	42	51	Negative	Positive	Negative
19	85145	4.0	1.9	2.1	47	49	Positive	Negative	Negative
20	78195	6.50	4.8	1.7	59	163	Positive	Negative	Negative

**Table -19**

S.No	OP No	Age/Sex	BLOOD INVESTIGATIONS							BIO CHEMICAL			URINE ANALYSIS	
			TC Cells / Cu.mm	DC			ESR		Hb gms%	Sugar (R) mgms %	Urea mgms %	S.Cholesterol gms%	Albumin	Sugar
				P	L	E	1/2 hr	1 hr						
1	18241	44 male	8750	63	32	3	10	20	13.2	131	19	170	Nil	Nil
2	47491	43 male	9700	72	26	2	6	12	14.2	124	18	165	Nil	Nil
3	59780	25 male	8600	64	32	4	9	18	12.3	101	16	130	Nil	Nil
4	50439	53 female	7500	60	37	3	18	35	15.3	99	18	196	Nil	Nil
5	68857	27 female	7400	70	28	2	20	38	11	125	28	200	Nil	Nil
6	76919	34 male	7870	61	40	3	6	12	17.8	129	20	190	Nil	Nil
7	76920	19 male	8700	60	36	4	30	65	13	123	26	140	Nil	Nil
8	80909	55 female	8350	68	26	6	15	32	10	112	21	175	Nil	Nil
9	81474	27 male	7100	58	40	2	14	28	12.7	114	18	160	Nil	Nil
10	83681	18 male	7600	67	31	2	14	30	11.8	127	30	190	Nil	Nil
11	83972	16 male	7230	61	37	2	12	22	10.5	100	21	185	Nil	Nil
12	83973	60 female	8100	51	45	4	12	21	11.8	101	16	145	Nil	Nil
13	84865	23 male	7650	61	36	3	19	38	12.5	103	21	170	Nil	Nil
14	84866	32 male	8960	58	42	0	15	32	12	125	19	170	Nil	Nil
15	85144	20 male	9100	52	45	3	20	40	11.5	121	25	182	Nil	Nil
16	87939	45 male	8500	68	32	0	26	40	11.4	104	16	175	Nil	Nil
17	87940	52 male	7800	60	38	2	13	28	10.5	123	20	200	Nil	Nil
18	96487	50 female	8600	68	32	0	20	42	12	126	24	160	Nil	Nil
19	85145	60 female	7900	58	41	1	15	32	13	134	25	185	Nil	Nil
20	78195	46 male	7800	61	35	4	14	26	14	99	27	180	Nil	Nil

## DIFFERENTIAL DIAGNOSIS

### PITHA PANDU (பித்த பாண்டு)

“வாமென்ற மேனியெல்லா மஞ்ச ளித்து  
மகாவெழுப்பு உண்டாகி மந்தக் கண்ணாம்  
தாமென்ற தாகமொடு மூச்சை யாகுந்  
தனிவாயில் மிளகுபோற் றானு ரைக்கும்  
நேமென்ற நெஞ்சுமுடி தானு முண்டாய்  
நெருக்கிய மூச்சுமுட் டதுவே யாகும்  
கேமென்ற கிறுகிறுத்து வாய்கைப் பாகும்  
கிளர்ப்பித்த பாண்டுவெனக் கீற லாமே

- யுகி வைத்திய சிந்தாமணி

### Symptoms (குறிகுணங்கள்)

- 1) உடல் மஞ்சளித்தல்
- 2) நா, கை, கால்கள் வெளுத்தல்
- 3) கண்பார்வை மங்கல்
- 4) நீர்வேட்கை
- 5) மயக்கம்
- 6) வாய் காரச் சுவை யோடியிருத்தல்
- 7) வாய் கைத்தல்
- 8) நெஞ்சை இறுக்கி பிடித்தது போலிருத்தல்
- 9) மூச்சு முட்டல்
- 10) தலை கிறுகிறுப்பு

## MANJAL PERUVAYARU (மஞ்சள் பெருவயிறு)

"செப்பவே நடுக்கலொடு குளர்ச்சி யாகும்  
சீறியதோர் மூக்குமுகம் மார்பு வேர்க்கும்  
உப்பவே உடம்புலரும் புறங்கால் வீங்கும்  
உளைந்துமே அடிவயிறு மிகச்சு ருங்கும்  
துப்பவே கோழையோடு சுரமு முண்டாகும்  
சுகமில்லை நித்திரைதான் றலைவ லிக்கும்  
தப்பவே மிகத்தாகஞ் சலிக்குஞ் சிந்தை  
தளருங்கா மரலைமகோ தரந்தா னாமே.

- யூகி வைத்திய சிந்தாமணி

### Symptoms (குறிகுணங்கள்)

- 1) உடல் மஞ்சளித்தல்
- 2) உடல் நடுக்கத்துடன் குளிர்
- 3) மூக்கு, முகம், மார்பு வியர்க்கும்
- 4) தலை வலி
- 5) உடம்புலரும்
- 6) புறங்கால் வீங்கும்
- 7) அடிவயிறு மிக கருங்கும்
- 8) கோழையோடு சுரம்
- 9) உறக்கமின்மை
- 10) மிக்கதாகம்
- 11) மனம் களித்தல்

Disease	Presenting symptoms	Absenting symptoms with that of “Peru Manjal Noi”
Pitha pandu	Yellowish discoloration of skin Pallor in tongue, foot and hand Dull vision Excessive thirst Giddiness Bitter and Sour taste in tongue Chest tightness Dyspnoea	Yellowish discoloration of urine Yellowish discoloration of soft palate, uvula Loss of appetite Indigestion Constipation Mental depression
Manjal Pervayaru	Yellowish discoloration of skin Chills and Tremor Sweating in the face and chest Head ache Dryness of skin Pedal edema Lower abdomen shrinkening Fever and expectoration Insomnia Excessive thirst Mental Depression	Yellowish discoloration of urine Yellowish discoloration of soft palate, uvula Loss of appetite Indigestion Constipation Dyspnoea

## **DISCUSSION & SUMMARY**

- The author has selected “Peru Manjal Noi” for the dissertation subject, because it is one of the disease for which the siddha system of medicine holding many effective and safety medicines than any other medical systems.
- These medicines having its unique properties of hepatoprotective, hepatotonic and anti hepatotoxic, through which diseased people can benefit in a short period of time within the clinical course of the disease, without any complication.
- In order to provide these medicines in a specific line of treatment, perfect diagnosis should be made out. So the author bound to evaluate more of the siddha parameters towards the understanding of aetiology, pathology, diagnosis and prognosis of the disease “Peru Manjal Noi” which is said in “Yugi Vaithya Sinthamani” under “Kamalai roga nithanam”.

### **Age and sex references:**

In this study totally 20 patients were put on, of them 14 were male and 6 were female, belongs to all age groups starting from 13 to 60 years old. The increased proportion of male to female was due to their unhygienic food habits outside the home.

### **Socio Economic status:**

All categories of people are affected, even though most of them belong to the poor socio economic group

**Diet & personal habits:**

On observation the disease develops only to those who take unhygienic water and food which increases the “Uyirthathukal” - Azhal and Iyam along with activities which causes the derangement of the above” Uyirthathukal”.

**Interpretation of Siddha Parameters:****Status of the Uyr thathukal:**

In Peru Manjal Noi the Azhal kuttram and Iya kuttram are primarily affected and later on the Valikutram joins the chain and presenting the disease.

**Azhal changes:**

From the aetiology it is clear, that the Azhal kuttram is affected primarily, the changes in Azhal are as follows.

100% of cases have decreased Anar pitham, Ranjagapitham and Sathagapitham.

100% of cases showed deranged Prasagapitham.

**Iyam changes:**

The Iya kuttram also deranged in equal importance with Azhal Kuttram.

- 100% cases had increased Kilethagam.
- 100% cases had decreased Pothagam.
- 90% cases had decreased Tharpagam.



**Vali - changes:**

Vali kuttram were affected following the Azhal and Iya kuttram.

- 100% cases had decreased Pranan and Samanan
- 65% cases had decreased Abanan.  
35% cases had increased Abanan
- 100%cases had derangement in Vyanan and Kirugaram
- 80% cases had increased activity of Uthanan
- 60% cases had increased Koorman.

**Udal thathukal – changes:**

In Peru Manjal Noi the derangement of the above “Uyirthathukal” were reflected in the nature of the four udal thathukal.

- 100% cases were affected with Saram, Senneer, Oon and kozhupu Thathukal.

**Validation of Ennvagai Thervugal:****NAA:**

- 50% cases showed yellowish discoloration of ventrum of tongue.
- 55% cases showed coated tongue.
- 95% cases felt bitter taste in the tongue.

The yellowish discoloration in tongue and bitter taste holds some diagnostic importance.

**Niram:**

Except for the yellowish discoloration of the conjunctiva, ventrum of tongue, and urine, the “Niram” in other areas had no much diagnostic value in the acute phase of the disease.

**Mozhi:**

70% cases showed low pitched sound (Thazhantha oli)

30% cases showed medium pitched sound (Sama oli)

The low pitched sound due to affected “Uthanan vayu” provides some diagnostic clue.

**Vizhi:**

65% cases showed yellowish discoloration of conjunctiva.

35% cases showed mild yellowish discoloration of conjunctiva

90% cases experienced burning sensation in a eyes.

60% cases showed increased lacrimation.

Hence the yellow and mild yellow discolorations of eyes along with burning sensation in the eyes have more **significant** diagnostic value.

**Sparisam:**

60% cases felt increased warmth over the skin but this alone cannot give much support in the diagnosis.

**Naadi:**

60% cases showed “Pitha Vatham”

40% cases showed “Pitha kabam”

The Naadi nadai felt in all the cases were exactly the same as mentioned in “Sathaga Naadi” and “Naadi Nool” . No other Naadi nadai interferes

**PITHA KABAM**

“பண்பான பித்தத்தில் சேத்தும நாடி

பரிசித்த லத்திகர மிளைப்பு ஈளை

கண்காது நயனமலம் நீரு மஞ்சள்

களவயிறு பொருமல் மஞ்சள் நோய் கண்ணோவு”.

- சதக நாடி

**PITHA VATHAM**

“சாதுமடா பித்தமந்த வாதத்தி லேறில்

தளஞ்செய்யும் பாண்டு காமாலை தானும்”

- நாடி நூல்

Hence the Naadi holds a **good** diagnostic value in the diagnosis of “Peru Manjal Noi”

**Malam:**

Of 20 cases 65% cases developed constipation as said in the poem gives some support in diagnosis but developing loose stools in 35 % cases is also to be considered in diagnosis and prognosis.

### Neerkuri:

The yellowish discoloration of urine in 80 % of cases and the reddish yellow discoloration of urine seen in 20 % of cases have diagnostic value which are the same as mentioned by “Theriyar”,

### காமாலை நீர் நிறம் :-

“மந்திரி நிறமாய் வரப்படு நீரும்  
உந்திய எருவையை ஒத்துரு நீரும்  
பித்து காமாலைகளால் பிறந்தனாவனச்  
சித்திய வித்யாதரமது செப்புமே”

என்பதினால் பித்த (மஞ்சள்) நிறமாய் இழிகின்ற நீரும் தள்ளப்பட்ட உதிரத்தை ஒத்து இறங்குகின்ற நீரும் பித்த காமாலை ரோகங்களால் பிறந்தன வென்றும் சித்த வித்தியாதரம் என்னும் நூல் செப்பும்.

Therefore the color of the urine having a **fair** diagnostic value.

### Neikuri:

55% of total cases showed rounded slow spread pattern and 45% cases showed rounded fast spread pattern.

55% of total cases ( from both the above two patterns) showed sieve like appearance in the Neikuri.

- Here the “rounded pattern” represents the affected “kaba kuttram” , the “slow spread” represents the affected “pitha kuttram” and the “fast spread” represents the affected “Vatha kuttram”.
- Hence the “rounded slow spread” denotes the kuttram “Pitha Kabam”

- Hence “rounded fast spread” denotes the kuttram “Pitha Vatham”

**Deviation from “Gowthamar” and “Theraiyar” concepts of Nei kuri in “Peru Manjal Noi”:**

With respect to the “sieve like appearance” (Saladaikan) two concepts are denoted in the texts.

One is by “Gowthamar”, explaining that the disease showing such a pattern will not cure in General.

The other concept is by “Theraiyar” denoting that such a pattern of “saladaikan” indicates the increased “kaba kuttram” – representing the end stage of a disease in general.

Since the cases were recovered with effective medicines through correct diagnosis, the “Sieve like pattern” (Saladaikan) have no importance with the curable and incurable forms. So the general concept of “Gowthamar” (Saladaikan for incurable state) differs in “Peru Manjal Noi”.

Also the cases which showed “Sieve like pattern” had Naadi – “Pitha vatham”, represents that the ‘sieves formation’ during the “Neikuri” procedure indicates the increased “Vatha kuttram” through its nature of creating “hollow spaces”. Hence the general concept of “Theraiyar” (Suladaikan for increased kaba kuttram) differs in the “Peru Manjal Noi”.

Hence the Nei Kuri holds a **fair** diagnostic value in the diagnosis and prognosis of the disease “Peru Manjal Noi”.

**Manikadai Nool:**

An uneven distribution of the manikadai nool were observed which cannot be correlated with any other parameter, thus it has no significance in the diagnosis of the disease “Peru Manjal Noi”

**Interpretation between Siddha and Modern parameter:**

All the 20 cases with raised serum bilirubin showed the Naadi “Pitha vatham” and “Pitha kabam” as noted in the literature.

Hence the Siddha diagnostic tool Naadi showed 100% diagnostic coincidence with the Modern parameter Serum bilirubin.

Out of 20 cases 16 were with raised serum bilirubin level above 4.2 mg with respect to first visit to the OPD.

From those 16 cases 75% showed the Neikuri pattern of “Sieve like appearance”

Hence the Siddha diagnostic tool Neikuri with “Sieve like pattern” holds 75% diagnostic coincidence with the raised Serum bilirubin level above 4.2mg.

**Symptoms in the poem:**

From the observation, the symptoms of “Peru manjal noi” mentioned in the poem of “Yugi munivar” were depicted in all the cases, except some of the symptoms such as yellowish discolouration of face, soft palate, uvula hand and foot were not presented in the acute phase of the disease.

Modern lab investigations supported the study were,

1. Serum Bilirubin level.
2. Serum SGOT, SGPT level.
3. Anti HAV, HEV antibodies and Hbs Ag Australia antigen
4. ESR level.
5. Bile salts and Bile pigments in urine.

## CONCLUSION

A detailed study has been executed to establish the importance of the siddha parameters in diagnosing the disease “Peru Manjal Noi” through the understanding of the aetiology and pathogenesis of the disease through siddha science along with the support of Modern parameters.

It is clear from the observation that the tool “Manikadai nool” has no diagnostic significance in the disease “Peru Manjal Noi”

The results provides the diagnostic grade as *good* for one of the eight diagnostic tool “Naadi” and *fair* for the tool “Neerkuri” and “Neikuri” in the diagnosis of the disease “Peru Manjal Noi” through siddha way .

An *Excellent* diagnostic coincidence of the tool “Naadi” (Pithavatham and Pithakabam) , and a *fair* diagnostic coincidence of “Neikuri” (sieve like pattern) with that of the modern investigation “Serum bilirubin level” gives a better hope in diagnosis , accessing the prognosis and in designing a better treatment plan for the disease “Peru Manjal Noi”.



**GOVT SIDDHA MEDICAL COLLEGE,  
PALAYAMKOTTAL.**

**DEPARTMENT OF PG NOI NAADAL**

**A STUDY ON DIAGNOSTIC METHODOLOGY IN PERU  
MANJAL NOI THROUGH SIDDHA PARAMETERS**

**FORM I**

**SCREENING AND SELECTION PROFORMA**

1. O.P.No \_\_\_\_\_ 2. I.P No \_\_\_\_\_ 3. Bed No: \_\_\_\_\_

4. S.No: \_\_\_\_\_

5. Name: \_\_\_\_\_ 6. Age (years):

7. Gender: M ☐ F ☐

8. Occupation: \_\_\_\_\_

9. Income: \_\_\_\_\_

10. Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. Contact No: \_\_\_\_\_

12. E-mail : \_\_\_\_\_

**CRITERIA FOR INCLUSION:**

	YES	NO
1. Both sex.	<input type="checkbox"/>	<input type="checkbox"/>
2. Age between 13 and 60 years old.	<input type="checkbox"/>	<input type="checkbox"/>
3. Yellowish discoloration of conjunctiva.	<input type="checkbox"/>	<input type="checkbox"/>
4. Yellowish discoloration of ventrum of tongue.	<input type="checkbox"/>	<input type="checkbox"/>
5. Increased serum bilirubin above normal range.	<input type="checkbox"/>	<input type="checkbox"/>

Cases satisfying minimum, four of five criteria can be included in the study.

**CRITERIA FOR EXCLUSION:**

	YES	NO
1. Diabetes Mellitus Associated with Jaundice.	<input type="checkbox"/>	<input type="checkbox"/>
2. Hypertension Associated with Jaundice.	<input type="checkbox"/>	<input type="checkbox"/>
3. Hepatic carcinoma Associated with Jaundice.	<input type="checkbox"/>	<input type="checkbox"/>
4. Latent jaundice.	<input type="checkbox"/>	<input type="checkbox"/>
5. Carotenemia.	<input type="checkbox"/>	<input type="checkbox"/>

Date:

Signature:

**GOVT SIDDHA MEDICAL COLLEGE,  
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**FORM I-A  
HISTORY PROFORMA**

1. SI.No of the case: \_\_\_\_\_

2. Name: \_\_\_\_\_ Height: \_\_\_\_\_ cms

Weight: \_\_\_\_\_ Kg

3. Age (years): \_\_\_\_\_ DOB 

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D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐.

4) Graduate/ Post graduate ☐

5. Nature of work:

1) Sedentary work ☐

2) Field work with physical labour ☐

3) Field work Executive ☐

6. Complaints and Duration:

\_\_\_\_\_

---

---

---

7. History of present illness:

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8. History of Past illness:

	1. Yes	2.No
a. Affected by jaundice	<input type="checkbox"/>	<input type="checkbox"/>
b. Amoebic liver	<input type="checkbox"/>	<input type="checkbox"/>
c. Alcoholic liver disease	<input type="checkbox"/>	<input type="checkbox"/>
d. any other liver disease	<input type="checkbox"/>	<input type="checkbox"/>

9. Habits:

	1. Yes	2. No
Smoking	<input type="checkbox"/>	<input type="checkbox"/>

(A.cigarette/B.Beedi No. of packets/day) \_\_\_\_\_

Alcohol (Occasional/Regular/day)	<input type="checkbox"/>	<input type="checkbox"/>
Drug Addiction	<input type="checkbox"/>	<input type="checkbox"/>
Betel nut chewer:	<input type="checkbox"/>	<input type="checkbox"/>
Tea (No. of times/day)	<input type="checkbox"/>	<input type="checkbox"/>
Coffee (No. of times/day)	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

Milk

Type of diet      V   ☐   NV   ☐      M   ☐

10. Personal history:

Marital status:   Married   ☐      Unmarried   ☐

Consanguineous Marriage:   Yes                      No  
                                                                                 ☐                      ☐

No. of children:   Male:   \_\_\_\_\_      Female:   \_\_\_\_\_

11. Family history:

Yes      No

History of similar symptoms                      ☐      ☐

Father                                              ☐      ☐

Mother                                              ☐      ☐

13. GENERAL ETIOLOGY FOR ‘PERU MANJAL NOI’

Yes

No

1. Affected by jaundice previously      ☐                      ☐

2. Amoebic liver                              ☐                      ☐

3. Alcoholic liver disease                  ☐                      ☐

☐                      ☐

4. Any other liver disease

14. CLINICAL SYMPTOMS OF ‘PERU MANJAL NOI’

	Present	Absent
1. Yellowish discoloration of conjunctiva	<input type="checkbox"/>	<input type="checkbox"/>
2 yellowish discoloration of ventrum of Tongue.	<input type="checkbox"/>	<input type="checkbox"/>
3.yellowish discoloration of nail bed	<input type="checkbox"/>	<input type="checkbox"/>
4.yellowish discoloration of urine	<input type="checkbox"/>	<input type="checkbox"/>
5.itching	<input type="checkbox"/>	<input type="checkbox"/>
6.anorexia	<input type="checkbox"/>	<input type="checkbox"/>
7.Nausea	<input type="checkbox"/>	<input type="checkbox"/>
8.Vomiting	<input type="checkbox"/>	<input type="checkbox"/>
9.Lassitude	<input type="checkbox"/>	<input type="checkbox"/>
10.Indigestion	<input type="checkbox"/>	<input type="checkbox"/>
11.Diarrhoea	<input type="checkbox"/>	<input type="checkbox"/>

**GOVT SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI.**

**A STUDY ON DIAGNOSTIC METHODOLOGY IN PERU  
MANJAL NOI THROUGH SIDDHA PARAMETERS**

**FORM II**  
**CLINICAL ASSESSMENT**

1. Serial No: \_\_\_\_\_

2. Name: \_\_\_\_\_

3. Date of birth: 

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D D M M Y E A R

4. Age: \_\_\_\_\_ years

5. Date: \_\_\_\_\_

**GENERAL EXAMINATION:**

1. Height: \_\_\_\_\_ cms. 3. BMI \_\_\_\_\_ (Weight Kg/ Height m<sup>2</sup>)

2. Weight (kg):

3. Temperature (°F):

4. Pulse rate:

5. Heart rate:

6. Respiratory rate:

7. Blood pressure:

8. Pallor:

9. Cyanosis:

10. Clubbing
11. Pedal edema:
12. Jugular vein pulsation
13. Lymphadenopathy:

### **VITAL ORGANS EXAMINATION**

	Normal	Affected
1. Stomach	<input type="checkbox"/>	<input type="checkbox"/>
2. Liver	<input type="checkbox"/>	<input type="checkbox"/>
3. Spleen	<input type="checkbox"/>	<input type="checkbox"/>
4. Lungs	<input type="checkbox"/>	<input type="checkbox"/>
5. Heart	<input type="checkbox"/>	<input type="checkbox"/>
6. Kidney	<input type="checkbox"/>	<input type="checkbox"/>
7. Brain	<input type="checkbox"/>	<input type="checkbox"/>

### **SYSTEMIC EXAMINATION:**

1. Gastrointestinal System \_\_\_\_\_
2. Respiratory System \_\_\_\_\_
3. Cardio Vascular System \_\_\_\_\_
4. Central Nervous System \_\_\_\_\_
5. Uro genital System \_\_\_\_\_
6. Endocrine System \_\_\_\_\_



## SIDDHA SYSTEM OF EXAMINATION

### [1] ENNVAGAI THERVU [EIGHT-FOLD EXAMINATION]

#### I. NAADI (KAI KURI) (RADIAL PULSE READING)

##### (a) Naadi Nithanam (Pulse Appraisal)

##### 1. Kaalam (Pulse reading season)

- |                                     |                          |                                      |                          |
|-------------------------------------|--------------------------|--------------------------------------|--------------------------|
| 1. Kaarkaalam<br>(Rainy season)     | <input type="checkbox"/> | 2. Koothirkaalam<br>(Autumn)         | <input type="checkbox"/> |
| 3. Munpanikaalam<br>(Early winter)  | <input type="checkbox"/> | 4. Pinpanikaalam<br>(Late winter)    | <input type="checkbox"/> |
| 5. Ilavenirkaalam<br>(Early summer) | <input type="checkbox"/> | 6. Muthuvenirkaalam<br>(Late summer) | <input type="checkbox"/> |

##### 2. Desam (Climate of the patient's habitat)

- |                         |                          |                    |                          |
|-------------------------|--------------------------|--------------------|--------------------------|
| 1. Kulir<br>(Temperate) | <input type="checkbox"/> | 2. Veppam<br>(Hot) | <input type="checkbox"/> |
|-------------------------|--------------------------|--------------------|--------------------------|

##### 3. Vayathu (Age)

1. 1-33yrs	<input type="checkbox"/>	2. 34-66yrs	<input type="checkbox"/>	3. 67-100	<input type="checkbox"/>
------------	--------------------------	-------------	--------------------------	-----------	--------------------------

##### 4. Udal Vanmai (General body condition)

- |            |                          |           |                          |           |                          |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|
| 1. Iyyalbu | <input type="checkbox"/> | 2. Valivu | <input type="checkbox"/> | 3. Melivu | <input type="checkbox"/> |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|

##### 5. Naadiyin Vanmai (Expansile Nature)

- |           |                          |           |                          |
|-----------|--------------------------|-----------|--------------------------|
| 1. Vanmai | <input type="checkbox"/> | 2. Menmai | <input type="checkbox"/> |
|-----------|--------------------------|-----------|--------------------------|

##### 6. Panbu (Habit)

- |                              |                          |                            |                          |                            |                          |
|------------------------------|--------------------------|----------------------------|--------------------------|----------------------------|--------------------------|
| 1. Thannadai<br>(Playing in) | <input type="checkbox"/> | 2. Munnokku<br>(Advancing) | <input type="checkbox"/> | 3. Pinnokku<br>(Flinching) | <input type="checkbox"/> |
| 4. Pakkamnokku               | <input type="checkbox"/> | 5. Puranadai               | <input type="checkbox"/> | 6. Illaitthal              | <input type="checkbox"/> |

- |               |                          |               |                          |               |                          |
|---------------|--------------------------|---------------|--------------------------|---------------|--------------------------|
| (Swerving)    |                          | (Playing out) |                          | (Feeble)      |                          |
| 7. Kathithal  | <input type="checkbox"/> | 8. Kuthithal  | <input type="checkbox"/> | 9. Thullal    | <input type="checkbox"/> |
| (Swelling)    |                          | (Jumping)     |                          | (Frsiking)    |                          |
| 10. Azhutthal | <input type="checkbox"/> | 11. Padutthal | <input type="checkbox"/> | 12. Kalatthal | <input type="checkbox"/> |
| (Ducking)     |                          | (Lying)       |                          | (Blending)    |                          |
| 13. Suzhalal  | <input type="checkbox"/> |               |                          |               |                          |
| (Revolving)   |                          |               |                          |               |                          |

**(b) Naadi nadai (Pulse Play)**

- |               |                          |               |                          |                 |                          |
|---------------|--------------------------|---------------|--------------------------|-----------------|--------------------------|
| 1. Vali       | <input type="checkbox"/> | 2. Vali Azhal | <input type="checkbox"/> | 3. Vali Iyyam   | <input type="checkbox"/> |
| 4. Azhal      | <input type="checkbox"/> | 5. Azhal Vali | <input type="checkbox"/> | 6. Azhal Iyyami | <input type="checkbox"/> |
| 7. Iyyam      | <input type="checkbox"/> | 8. Iyya vali  | <input type="checkbox"/> | 9. Iyya Azhal   | <input type="checkbox"/> |
| 10. Mukkutram | <input type="checkbox"/> |               |                          |                 |                          |

**II. NAA (TONGUE)**

1. Maa Padithal
- |         |                          |         |                          |        |                          |
|---------|--------------------------|---------|--------------------------|--------|--------------------------|
| Normal  | <input type="checkbox"/> | Present | <input type="checkbox"/> | Absent | <input type="checkbox"/> |
| Uniform | <input type="checkbox"/> | Patches | <input type="checkbox"/> | Niram  | _____                    |

- |                   |                          |                          |                          |
|-------------------|--------------------------|--------------------------|--------------------------|
| 2. Naavin Niram   | 1. Karuppu               | 2. Manjal                |                          |
| Dorsum            | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| Ventrum           | <input type="checkbox"/> | <input type="checkbox"/> |                          |
| 3. Velluppu       | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| (Colour)          | (Dark)                   | (Yellow)                 | (Pale)                   |
| 3. Suvai          | 1. Kaippu                | 2. Pulippu               | 3. Inippu                |
| (Taste sensation) | (Bitter)                 | (Sour)                   | (Sweet)                  |
|                   | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Vedippu        | 1. Present               | 2. Absent                | <input type="checkbox"/> |
| (Fissure)         |                          |                          |                          |

5. Vai neer ooral (Salivation)      1.Normal ☐      2.Increased ☐      3.Reduced ☐

Colour      Colouress ☐      Milkywhite ☐

---

6. Deviation      Present ☐      Absent ☐

---

7. Pigmentation      Present ☐      Absent ☐

---

Dot ☐      Whole ☐

Area of Pigmentation

Tip ☐      Sides ☐      Root ☐      Whole ☐

### III.NIRAM (COLOUR)

1. Iyalbana Niram      1. Karuppu ☐      2.Manjal ☐      3.Velluppu ☐  
(Dark)      (Yellowish)      (Fair)

2. Asadharana Niram maatram      1. Karuppu ☐      2.Manjal ☐  
(Dark)      (Yellowish)

3.Velluppu ☐      4. Maaniram ☐  
(Pale)

Regular ☐      Irregular ☐

#### IV. MOZHI (VOICE)

1. Sama oli ☐ 2. Urattha oli 3. Thazhantha oli ☐  
(Medium pitched) (High pitched) (Low pitched)
4. sound produced in the lung field during at rest ☐

#### V. VIZHI (EYES)

1. Niram (Venvizhi)  
(Discoloration)

- |                      |                          |                        |                          |
|----------------------|--------------------------|------------------------|--------------------------|
| 1. Karuppu<br>(Dark) | <input type="checkbox"/> | 2. Manjal<br>(Yellow)  | <input type="checkbox"/> |
| 3. Sivappu<br>(Red)  | <input type="checkbox"/> | 4. Velluppu<br>(White) | <input type="checkbox"/> |
| 5. Pazhupu(muddy)    | <input type="checkbox"/> | 6. No                  | <input type="checkbox"/> |

Discoloration

Imai Neeki Paarthal

- |                           |                          |                       |                          |
|---------------------------|--------------------------|-----------------------|--------------------------|
| 1. Sivapu<br>(Red)        | <input type="checkbox"/> | 2. Velluppu<br>(Pale) | <input type="checkbox"/> |
| 3. Ilam Sivappu<br>(Pink) | <input type="checkbox"/> | 4. Manjal<br>(Yellow) | <input type="checkbox"/> |

2. Neerthuvam  
3. Reduced  
(Moisture)

1. Normal ☐ 2. Increased ☐ ☐

3. Erichchal  
(Burning sensation)

1. Present ☐ 2. Absent ☐

4. Peelai seruthal  
(Mucus excrements)

1. Present ☐ 2. Absent ☐

5. Any other eye disease \_\_\_\_\_

## VI. MEI KURI (PHYSICAL SIGNS)

- |                                                  |                                                            |                                                 |                                                                  |
|--------------------------------------------------|------------------------------------------------------------|-------------------------------------------------|------------------------------------------------------------------|
| 1. Veppam<br>(Warmth)                            | 1. Mitham <input type="checkbox"/><br>(Mild)               | 2. Migu <input type="checkbox"/><br>(Moderate)  | 3. Thatpam <input type="checkbox"/><br>(Low)                     |
| 2. Viyarvai<br>(Sweat)                           | 1. Increased <input type="checkbox"/>                      | 2. Normal <input type="checkbox"/>              | 3. Reduced <input type="checkbox"/>                              |
|                                                  | Colour _____                                               |                                                 |                                                                  |
|                                                  | Smell _____                                                |                                                 |                                                                  |
|                                                  | Place _____                                                |                                                 |                                                                  |
| 3. Thodu vali<br>(Tenderness)                    | 1. Present <input type="checkbox"/>                        | 2. Absent <input type="checkbox"/>              |                                                                  |
| 4. Padhikapatta Idathil<br>Unarvu<br>(Sensation) | 1. Erichal <input type="checkbox"/><br>(Burning sensation) | 2. Arippu <input type="checkbox"/><br>(Itching) | 3. Unarchi inmai <input type="checkbox"/><br>(Loss of sensation) |

## VII. MALAM (STOOLS)

- |                                        |                                                  |                                                   |                                       |
|----------------------------------------|--------------------------------------------------|---------------------------------------------------|---------------------------------------|
| 1. Ennikai / Naal                      | <input type="checkbox"/>                         |                                                   |                                       |
| 2. Alavu<br>(Quantity)                 | a) Normal <input type="checkbox"/>               | b) Increased <input type="checkbox"/>             | c) Decreased <input type="checkbox"/> |
| 3. Niram<br>(Color)                    | 1. Karuppu <input type="checkbox"/><br>(Black)   | 2. Manjal <input type="checkbox"/><br>(Yellowish) |                                       |
|                                        | 3. Sivappu <input type="checkbox"/><br>(Reddish) | 4. Velluppu <input type="checkbox"/><br>(Pale)    |                                       |
| 4. Sikkal<br>(Constipation)            | 1. Present <input type="checkbox"/>              | 2. Absent <input type="checkbox"/>                |                                       |
| 5. Sirutthal<br>(Poorly formed stools) | 1. Present <input type="checkbox"/>              | 2. Absent <input type="checkbox"/>                |                                       |
| 6. Kalichchal / Naal                   | <input type="checkbox"/>                         | <input type="checkbox"/>                          |                                       |

1. Loose watery stools	1. Present	2. Absent
2. Digested food	1. Present <input type="checkbox"/>	2. Absent <input type="checkbox"/>
3. Seetham (Watery and mucoid excrements)	1. Present <input type="checkbox"/>	2. Absent <input type="checkbox"/>
Colour of Seetham	1. Venmai <input type="checkbox"/>	2. Manjal <input type="checkbox"/>
7. Venmai	1. Present <input type="checkbox"/>	2. Absent <input type="checkbox"/>
8. Passing of	a) Mucous	1. Present <input type="checkbox"/> 2. Absent <input type="checkbox"/>
	b) Blood	1. Present <input type="checkbox"/> 2. Absent <input type="checkbox"/>
9. History of habitual Constipation	1. Present <input type="checkbox"/>	2. Absent <input type="checkbox"/>

## VIII. MOOTHIRAM (URINE)

### (a) NEER KURI (PHYSICAL CHARACTERISTICS)

<b>1. Niram (colour)</b>	Normal	<input type="checkbox"/>	Abnormal	<input type="checkbox"/>	
Colourless	<input type="checkbox"/>	Milky purulent	<input type="checkbox"/>	Orange	<input type="checkbox"/>
Red	<input type="checkbox"/>	Greenish	<input type="checkbox"/>	Dark brown	<input type="checkbox"/>
Bright red	<input type="checkbox"/>	Black	<input type="checkbox"/>	Brown red or yellow	<input type="checkbox"/>

<b>2. Manam (odour)</b>	Yes	No
Ammonical	: <input type="checkbox"/>	<input type="checkbox"/>
Fruity	: <input type="checkbox"/>	<input type="checkbox"/>
Others	: _____	

<b>3. Edai (Specific gravity)</b>	Yes	No
Normal (1.010-1.025)	: <input type="checkbox"/>	<input type="checkbox"/>
High Specific gravity (>1.025)	: <input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>

Low Specific gravity (<1.010) :

Low and fixed Specific gravity (1.010-1.012) : ☐ ☐

**4. Alavu (volume)** Yes No

Normal (1.2-1.5 lt/day) : ☐ ☐

Polyuria (>2lt/day) : ☐ ☐

Oliguria (<500ml/day) : ☐ ☐

Anuria : ☐ ☐

**5. Nurai (froth)** Yes No

Clear : ☐ ☐

Cloudy : ☐ ☐

If froth present, colour of the froth : \_\_\_\_\_

**6. Enjal (deposits)** : Yes No  
☐ ☐

**b) NEI KURI (oil spreading sign)**

1. Aravam ☐ 2. Mothiram ☐  
(Serpentine fashion) (Ring)

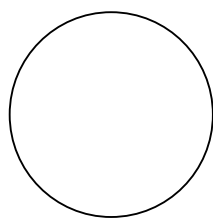
3. Muthu ☐ 4. Aravil Mothiram ☐  
(Pearl beaded appear) (Serpentine in ring

fashion)

5. Aravil Muthu ☐ 6. Mothirathil Muthu ☐  
(Serpentine and Pearl patterns) (Ring in pearl

7. Mothirathil Aravam ☐ 8. Muthil Aravam ☐  
(Ring in Serpentine fashion) (Pearl in Serpentine

9. Muthil Mothiram ☐ 10. Asathiyam ☐



fashion)

(Pearl in ring fashion) (Incurable)

11. Mellena paraval ☐

12.others: \_\_\_\_\_  
(Slow spreading)

**[2]. MANIKKADAI NOOL** (Wrist circummetric sign) : \_\_\_\_\_ fbs

Rt. Lt.

**[3]. IYMPORIGAL /IYMPULANGAL** (Penta sensors and its modalities)

	<b>1. Normal</b>	<b>2. Affected</b>
1. Mei (skin)	<input type="checkbox"/>	<input type="checkbox"/>
2. Vaai (Mouth/ Tongue)	<input type="checkbox"/>	<input type="checkbox"/>
3. Kann (Eyes)	<input type="checkbox"/>	<input type="checkbox"/>
4. Mookku (Nose)	<input type="checkbox"/>	<input type="checkbox"/>
5. Sevi (Ears)	<input type="checkbox"/>	<input type="checkbox"/>

**[4]. KANMENTHIRIYANGAL /KANMAVIDAYANGAL**

**(Motor machinery and its execution)**

	<b>1. Normal</b>	<b>2. Affected</b>
1. Kai (Hands)	<input type="checkbox"/>	<input type="checkbox"/>
2. Kaal (Legs)	<input type="checkbox"/>	<input type="checkbox"/>
3. Vaai (Mouth)	<input type="checkbox"/>	<input type="checkbox"/>
4. Eruvai (Analepy)	<input type="checkbox"/>	<input type="checkbox"/>



5. Karuvaai (Birth canal) ☐ ☐

**[5]. YAKKAI (SOMATIC TYPES)**

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built <input type="checkbox"/>	Thin covering of bones and joints <input type="checkbox"/>	Plumpy joints and limbs <input type="checkbox"/>
Hefty proximities of limbs <input type="checkbox"/>	by soft tissue	Broad forehead and cheeks <input type="checkbox"/>
Cracking sound of joints on walking <input type="checkbox"/>	Always found with warmth, sweating and offensive body odour <input type="checkbox"/>	Sparkling eyes with clear sight <input type="checkbox"/>
Dark and thicker eye lashes <input type="checkbox"/>	Wrinkles in the skin <input type="checkbox"/>	Lolling walk <input type="checkbox"/>
Dark and light admixed complexion <input type="checkbox"/>	Red and yellow admixed complexion <input type="checkbox"/>	Immense strength despite poor eating <input type="checkbox"/>
Split hair <input type="checkbox"/>	Easily suffusing eyes due to heat and alcohol <input type="checkbox"/>	High tolerance to hunger, thirst and fear <input type="checkbox"/>
Clear words <input type="checkbox"/>	Sparse hair with greying <input type="checkbox"/>	Exemplary character with good memory power <input type="checkbox"/>
Scant appetite for cold food items <input type="checkbox"/>	Intolerance to hunger, thirst and heat <input type="checkbox"/>	More liking for sweet taste <input type="checkbox"/>
Poor strength despite much eating <input type="checkbox"/>	Inclination towards perfumes like sandal <input type="checkbox"/>	Husky voice <input type="checkbox"/>
Loss of libido <input type="checkbox"/>	Slender eye lashes <input type="checkbox"/>	
In generosity <input type="checkbox"/>	Pimples and moles are plenty <input type="checkbox"/>	
Sleeping with eyes half closed <input type="checkbox"/>		

**RESULTANT SOMATIC TYPE:** \_\_\_\_\_

**[6] GUNAM**

- |                  |                          |               |                          |
|------------------|--------------------------|---------------|--------------------------|
| 1. Sathuva Gunam | <input type="checkbox"/> | 2. Rajo Gunam | <input type="checkbox"/> |
| 3. Thamo Gunam   | <input type="checkbox"/> |               |                          |

**[7] KOSAM**

	Normal	Affected
1. Annamaya kosam	<input type="checkbox"/>	<input type="checkbox"/>
2. Praanamya kosam	<input type="checkbox"/>	<input type="checkbox"/>
3. Manomaya kosam	<input type="checkbox"/>	<input type="checkbox"/>
4. Vingnanamaya kosam	<input type="checkbox"/>	<input type="checkbox"/>
5. Aanandamaya kosam	<input type="checkbox"/>	<input type="checkbox"/>

**[8] UYIR THATHUKKAL**

**A. VALI**

	1. Normal	2. Affected
1. Uyir kaal (Praanan)	<input type="checkbox"/>	<input type="checkbox"/>
2. Keel nokung kaal (Abaanan)	<input type="checkbox"/>	<input type="checkbox"/>
3. Nadukkaal (Samaanan)	<input type="checkbox"/>	<input type="checkbox"/>
4. Mel nokung kaal (Udhanan)	<input type="checkbox"/>	<input type="checkbox"/>
5. Paravung kaal	<input type="checkbox"/>	<input type="checkbox"/>

(Viyaanan)

- |                                             |                          |                          |
|---------------------------------------------|--------------------------|--------------------------|
| 6. Naahan<br>(Higher intellectual function) | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Koorman<br>(Air of yawning)              | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Kirukaran<br>(Air of salivation)         | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Devathathan<br>(Air of laziness)         | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Dhananjeyan<br>(Air that acts on death) | <input type="checkbox"/> | <input type="checkbox"/> |

**B. AZHAL**

**1. Normal**

**2. Affected**

- |                                         |                          |                          |
|-----------------------------------------|--------------------------|--------------------------|
| 1. Anala pittham<br>(Gastric juice)     | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Prasaka pittham<br>(Bile)            | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Ranjaka pittham<br>(Haemoglobin)     | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Aalosaka pittham<br>(Aqueous Humour) | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Saathaka pittham<br>(Life energy)    | <input type="checkbox"/> | <input type="checkbox"/> |

**C. IYYAM**

**1. Normal**

**2. Affected**

- |                           |                          |                          |
|---------------------------|--------------------------|--------------------------|
| 1. Avalambagam<br>(Serum) | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Kilethagam<br>(saliva) | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Pothagam<br>(lymph)    | <input type="checkbox"/> | <input type="checkbox"/> |

4. Tharpagam  
(cerebrospinal fluid) ☐ ☐
5. Santhigam  
(Synovial fluid) ☐ ☐

**[9] UDAL THATHUKKAL  
SAARAM**

INCREASED SAARAM (CHYLE)	DECREASED SAARAM(CHYLE)
Loss of appetite <input type="checkbox"/>	Loss weight <input type="checkbox"/>
Excessive salivation <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Loss of perseverance <input type="checkbox"/>	Dryness of the skin <input type="checkbox"/>
Excessive heaviness <input type="checkbox"/>	Diminished activity of the sense organs <input type="checkbox"/>
White musculature <input type="checkbox"/>	
Cough, dyspnea, excessive sleep <input type="checkbox"/>	
Weakness in all joints of the body <input type="checkbox"/>	

SAARAM: INCREASED ☐ DECREASED ☐ NORMAL ☐

**B. CENNEER:**

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the body <input type="checkbox"/>	Anemia <input type="checkbox"/>
Anorexia <input type="checkbox"/>	Tiredness <input type="checkbox"/>
Mental disorder <input type="checkbox"/>	Neuritis <input type="checkbox"/>
Splenomegaly <input type="checkbox"/>	Lassitude <input type="checkbox"/>
Colic pain <input type="checkbox"/>	Pallor of the body <input type="checkbox"/>

Increased pressure	<input type="checkbox"/>	
Reddish eye and skin	<input type="checkbox"/>	
Jaundice	<input type="checkbox"/>	
Haematuria	<input type="checkbox"/>	

CENNEER: INCREASED ☐ DECREASED ☐ NORMAL ☐

### [C]. OON

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis <input type="checkbox"/>	Impairment of sense organs <input type="checkbox"/>
Vernical ulcer <input type="checkbox"/>	Joint pain <input type="checkbox"/>
Tumour in face ,abdomen, thigh, genitalia <input type="checkbox"/>	Jaw, thigh and genitalia gets shortened <input type="checkbox"/>
Hyper muscular in the cervical region <input type="checkbox"/>	

OON: INCREASED ☐ DECREASED ☐ NORMAL ☐

### D. KOZHUPPU

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
-------------------------------------	-------------------------------------

Cervical lymph adenitis	<input type="checkbox"/>	Pain in the hip region	<input type="checkbox"/>
Vernical ulcer	<input type="checkbox"/>	Disease of the spleen	<input type="checkbox"/>
Tumour in face, abdomen, thigh, genitalia	<input type="checkbox"/>		
Hyper muscular in the cervical region	<input type="checkbox"/>		
Dyspnoea	<input type="checkbox"/>		
Loss of activity	<input type="checkbox"/>		

KOZHUPPU: INCREASED ☐ DECREASED ☐ NORMAL ☐

#### E. ENBU

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Excess growth in bones and teeth	<input type="checkbox"/>
	Bones diseases <input type="checkbox"/>
	Loosening of teeth <input type="checkbox"/>
	Nails splitting <input type="checkbox"/>
	Falling of hair <input type="checkbox"/>

ENBU: INCREASED ☐ DECREASED ☐ NORMAL ☐

## F. MOOLAI

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body <input type="checkbox"/>	Osteoporosis <input type="checkbox"/>
Swollen eyes <input type="checkbox"/>	Sunken eyes <input type="checkbox"/>
Swollen phalanges	
chubby fingers <input type="checkbox"/>	
Oliguria <input type="checkbox"/>	
Non healing ulcer <input type="checkbox"/>	

MOOLAI: INCREASED ☐ DECREASED ☐ NORMAL ☐

## G. SUKKILAM / SURONITHAM

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men <input type="checkbox"/>	Failure in reproduction <input type="checkbox"/>
Urinary calculi <input type="checkbox"/>	Pain in the genitalia <input type="checkbox"/>

SUKKILAM/SURONITHAM:

INCREASED ☐ DECREASED ☐ NORMAL ☐

## [10] MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam	1. Present	2. Absent
1. Emaciation	<input type="checkbox"/>	<input type="checkbox"/>
2. Complexion – blackish	<input type="checkbox"/>	<input type="checkbox"/>
3. Desire to take hot food	<input type="checkbox"/>	<input type="checkbox"/>
4. Shivering of body	<input type="checkbox"/>	<input type="checkbox"/>
5. Abdominal distension	<input type="checkbox"/>	<input type="checkbox"/>

6. Constipation	<input type="checkbox"/>	<input type="checkbox"/>
7. Insomnia	<input type="checkbox"/>	<input type="checkbox"/>
8. Weakness	<input type="checkbox"/>	<input type="checkbox"/>
9. Defect of sense organs	<input type="checkbox"/>	<input type="checkbox"/>
10. Giddiness	<input type="checkbox"/>	<input type="checkbox"/>
11. Lack of interest	<input type="checkbox"/>	<input type="checkbox"/>

<b>II. Pitham Migu Gunam</b>	<b>1. Present</b>	<b>2. Absent</b>
1. Yellowish discolouration Of skin	<input type="checkbox"/>	<input type="checkbox"/>
2. Yellowish discolouration Of the eye	<input type="checkbox"/>	<input type="checkbox"/>
3. Yellow coloured urine	<input type="checkbox"/>	<input type="checkbox"/>
4. Yellowishness of faeces	<input type="checkbox"/>	<input type="checkbox"/>
5. Increased appetite	<input type="checkbox"/>	<input type="checkbox"/>
6. Increased thirst	<input type="checkbox"/>	<input type="checkbox"/>
7. Burning sensation over the body	<input type="checkbox"/>	<input type="checkbox"/>
8. Sleep disturbance	<input type="checkbox"/>	<input type="checkbox"/>



### III. Kapham migu gunam

1. Present

2. Absent

- |                                  |                          |                          |
|----------------------------------|--------------------------|--------------------------|
| 1. Increased salivary secretion  | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Reduced activeness            | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Heaviness of the body         | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Body colour – fair complexion | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Chillness of the body         | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Reduced appetite              | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Eraippu                       | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Increased sleep               | <input type="checkbox"/> | <input type="checkbox"/> |

### [11]. NOIUTRA KALAM

- |                                     |                          |                                       |                          |
|-------------------------------------|--------------------------|---------------------------------------|--------------------------|
| 1. Kaarkaalam<br>(Aug15-Oct14)      | <input type="checkbox"/> | 2. Koothirkaalam<br>(Oct15-Dec14)     | <input type="checkbox"/> |
| 3. Munpanikaalam<br>(Dec15-Feb14)   | <input type="checkbox"/> | 4. Pinpanikaalam<br>(Feb15-Apr14)     | <input type="checkbox"/> |
| 5. Ilavanirkaalam<br>(Apr15-June14) | <input type="checkbox"/> | 6. Muthuvenirkaalam<br>(June15-Aug14) | <input type="checkbox"/> |

### [12]. NOI UTRA NILAM

- |                               |                          |                             |                          |                         |                          |
|-------------------------------|--------------------------|-----------------------------|--------------------------|-------------------------|--------------------------|
| 1. Kurunji<br>(Hilly terrain) | <input type="checkbox"/> | 2. Mullai<br>(Forest range) | <input type="checkbox"/> | 3. Marutham<br>(Plains) | <input type="checkbox"/> |
| 4. Neithal<br>(Coastal belt)  | <input type="checkbox"/> | 5. Paalai<br>(Desert)       | <input type="checkbox"/> |                         |                          |

**GOVT SIDDHA MEDICAL COLLEGE,  
PALAYAMKOTTAI.  
DEPARTMENT OF NOI NAADAL**

**A STUDY ON DIAGNOSTIC METHODOLOGY IN PERU  
MANJAL NOI THROUGH SIDDHA PARAMETERS**

**FORM-III**

**LABORATORY INVESTIGATIONS**

1. O.P No: \_\_\_\_\_ Lab.No \_\_\_\_\_ Serial No \_\_\_\_\_

2. Name: \_\_\_\_\_

3. Date of birth: 

--	--

--	--

--	--	--	--

  
D D M M Y E A R

4. Age: \_\_\_\_\_ years

5. Date of assessment: \_\_\_\_\_

**Urine Examination**

6. Sugar \_\_\_\_\_

7. Albumin \_\_\_\_\_

8. Deposits \_\_\_\_\_

**Blood**

9. TC \_\_\_\_\_ Cells/cu mm

10. DC

P \_\_\_\_\_%      L \_\_\_\_\_%      E \_\_\_\_\_%      M \_\_\_\_\_%  
B \_\_\_\_\_%

11. Hb \_\_\_\_\_ gms%

12. ESR At 30 minutes \_\_\_\_\_ mm                      at 60 minutes \_\_\_\_\_ mm

13. Blood Sugar-(F) \_\_\_\_\_ mgs%  
(PP) \_\_\_\_\_ mgs%

14. Serum bilirubin total, direct, indirect \_\_\_\_\_ mgs %

15. Blood urea \_\_\_\_\_

16. Serum Cholesterol \_\_\_\_\_

17. liver function test

SGOT \_\_\_\_\_

SGPT \_\_\_\_\_

ALP \_\_\_\_\_

18. Viral Markers.

Date:

Signature of the Doctor

**GOVT SIDDHA HOSPITAL –PALAYAMKOTTAI  
DEPARTMENT OF NOI NAADAL**

**A STUDY ON DIAGNOSTIC METHODOLOGY IN PERU  
MANJAL NOI THROUGH SIDDHA PARAMETERS**

**Register No:32103002 (2010-2013),**

**FORM IV A**

**INFORMED WRITTEN CONSENT FORM**

I .....exercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled A study on “ Peru Manjal Noi”. I will be required to undergo all routine examinations. I may be asked to give urine and blood samples during the study.

I have been informed about the study to my satisfaction by the attending investigator and the purpose of this trial and the nature of study and the laboratory investigations. I also give my consent to publish my urine sample photographs in scientific conferences and reputed scientific journals for the betterment of clinical research.

I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

Signature /thumb impression of the patient:

Date :

Name of the patient :

Signature of the investigator :

Date :

Head of the Department :

Date :

## **BIBLIOGRAPHY**

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**OP No : 18241**

**Age : 44 / Male**



**Yellowish Discoloration of Conjunctiva**



**Yellowish Discoloration of Ventrums of tongue**

**OP No : 86298**

**Age : 60 / Female**



**Yellowish Discoloration of Conjunctiva and Ventrums of tongue**

**NEERKURI**

**OP No : 18241**

**Age / Sex : 44 M**



**Reddish Yellow Colour of Urine**

**OP No : 78195**

**Age / Sex : 46 M**



**Yellow Colour of Urine**



**NEIKURI**  
**OP No : 18241**  
**Age / Sex : 44 M**



**Fast spread wih sieve.**

**OP No : 78195**  
**Age / Sex : 46 M**



**Fast spread wih sieve.**

**NEIKURI**  
**OP No : 83681**  
**Age / Sex : 18 M**



**Slow Spread**

**OP No : 76920**  
**Age / Sex : 19 M**



**Fast Spread**

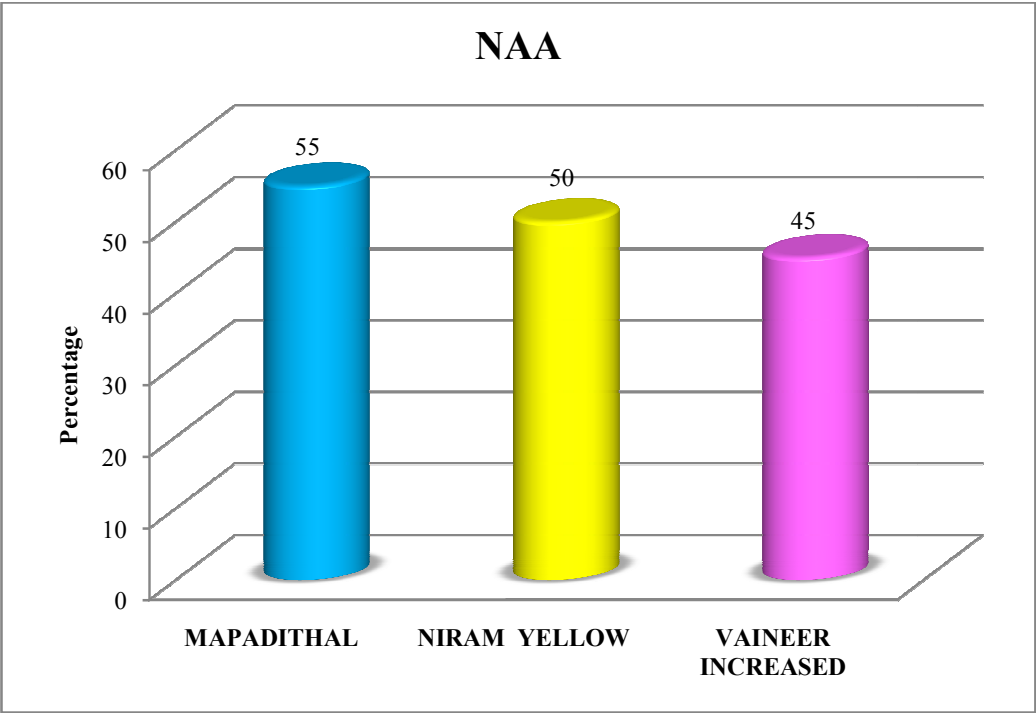
**NEIKURI**

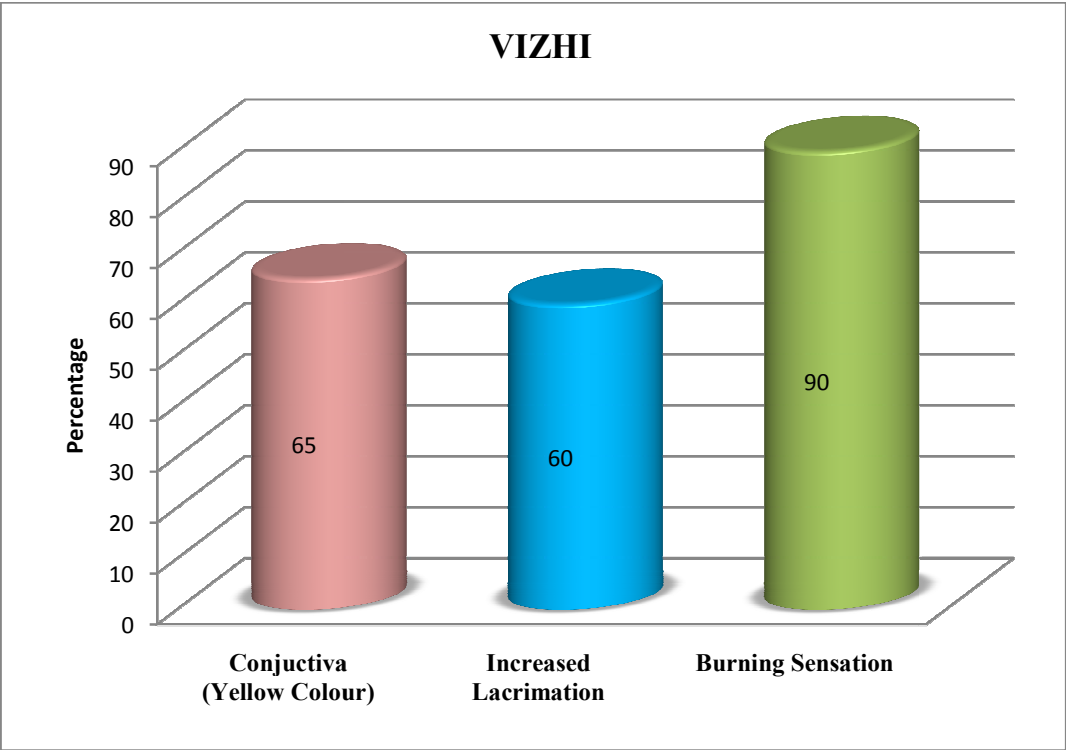
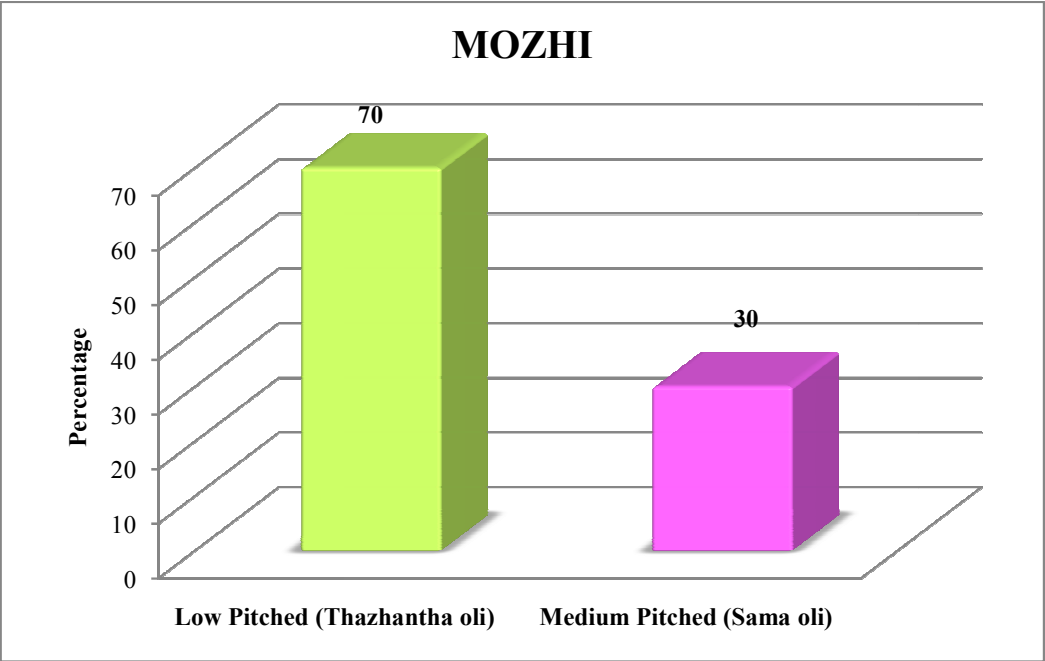
**OP No : 50439**

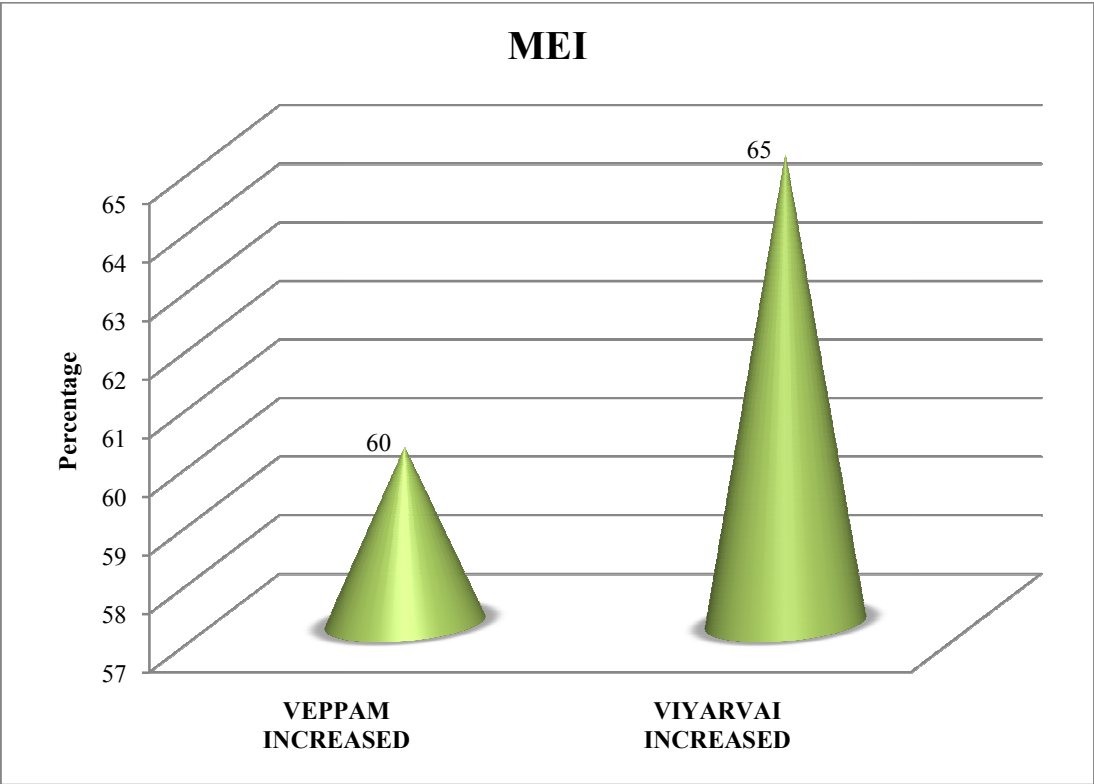
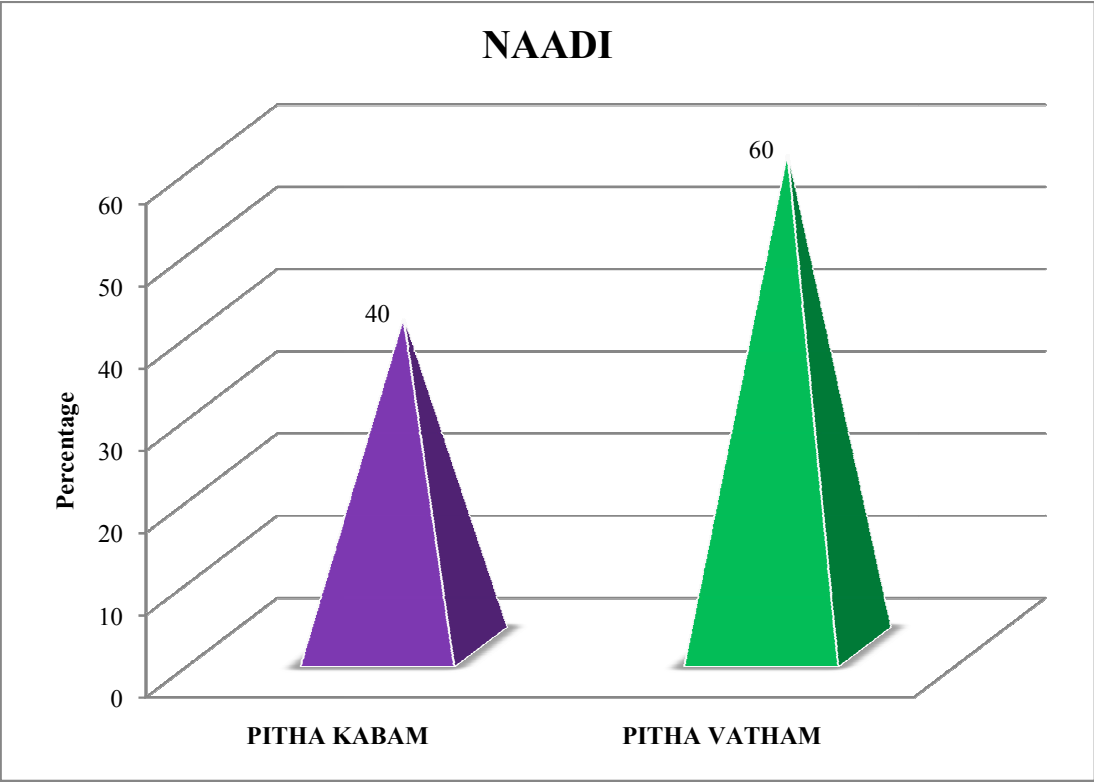
**Age / Sex : 53 F**



**Slow Spread with Sieve**

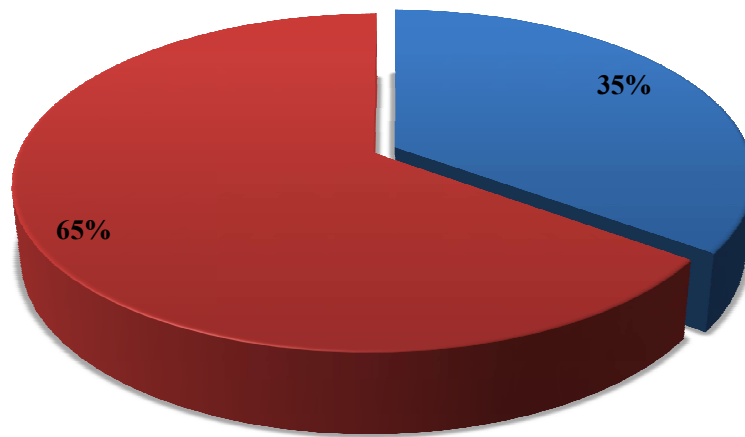




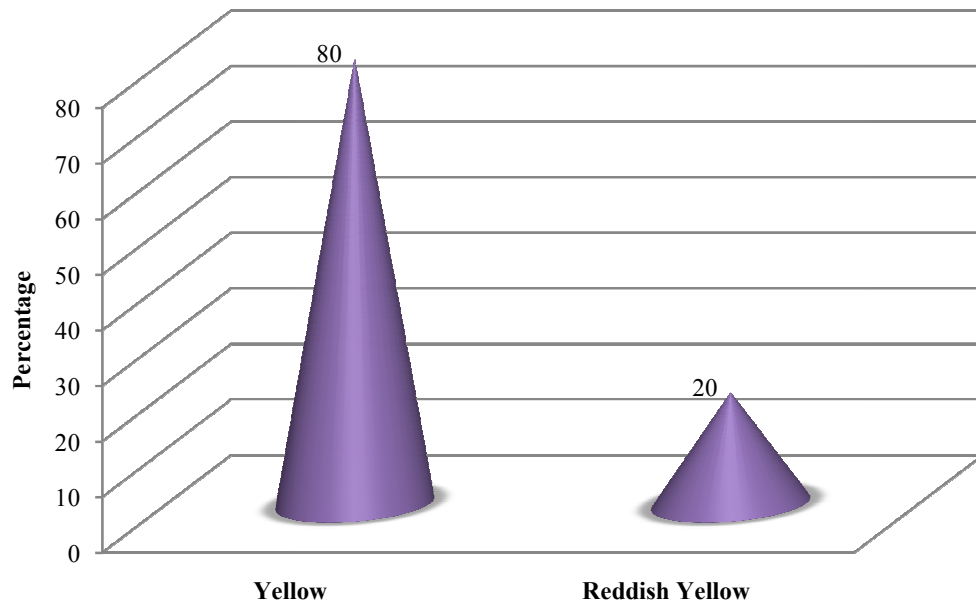


## MALAM

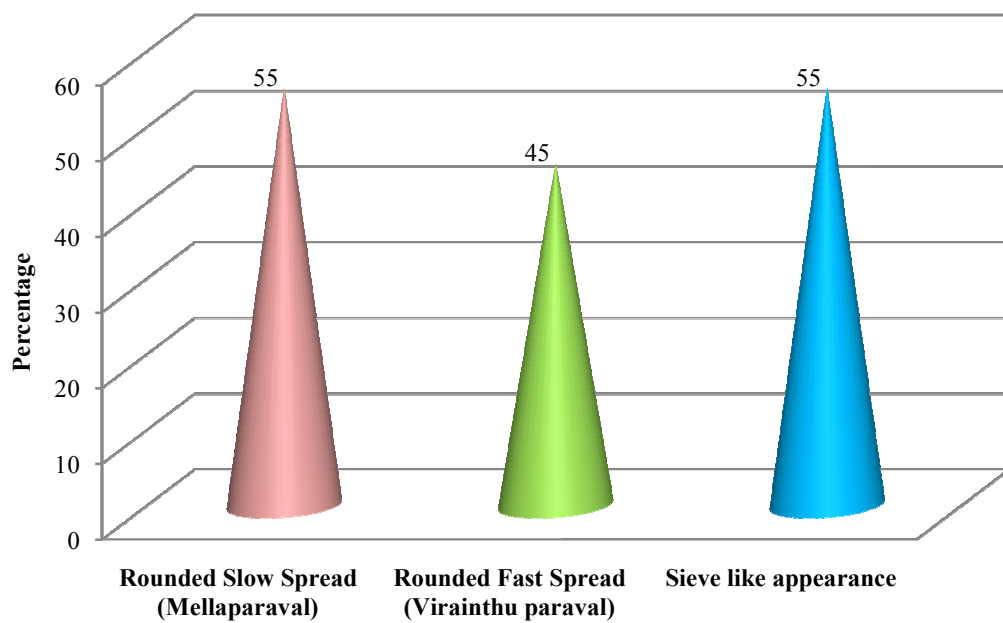
■ Dark Yellow Colour ■ Constipation



## NEERKURI - COLOUR OF URINE



## NEI KURI







# HITECH DIAGNOSTIC CENTRE

Multi Speciality Reference Laboratory

Central Lab  
1, Millers Road, Kilpakk, Chennai-10.  
Tel : 4291 9999

CT Scan, LAB & Molecular Diagnostics  
13, Dr. Nair Road, T. Nagar, Chennai-17  
Tel : 4293 8200



Page 4 of 4  
An ISO 9001:2008  
date Certified 9/2012  
Organisation

Ph - 0462 4200007; E-Mail : support@hitechlabsindia.com  
Web : www.hitechlabsindia.com

MYLAPORE 4207 4934	SALIGRAMAM 4554 2183	ANNA NAGAR 4261 2741	TAMBARAM 4315 9190	WASHERMENPET 4204 9452	MKB NAGAR 2552 0015	AMBATTUR 4208 6905	PERAVALLUR 4278 9603	VILLIVAKKAM 4355 4801	TRIPPLICANE 4351 8505	ADYAR 4558 7973	MADIPAKKAM 2247 5071	PALAVAKKAM 2451 4291
-----------------------	-------------------------	-------------------------	-----------------------	---------------------------	------------------------	-----------------------	-------------------------	--------------------------	--------------------------	--------------------	-------------------------	-------------------------

Patient : P0018754 **Mrs. SUBBU LAKSHMI (27/F)**

SID.No. : **005471**

SID Date : 10/09/2012

Branch : **PALAYAMKOTTAI**

Reg Time : 11:55:30

Referrer : **GOVERNMENT SIDDHA HOSPITAL.**

Rpt Date : 22/09/2012

Address :  
**PALAYAMKOTTAI  
TIRUNELVELI**

Rpt Time : 08:42:29

Page # : 1

**Final report**

Source : **DR.M.ARUNVANAN**

Test	Result	Reference Value
------	--------	-----------------

Sample collected and sent

## TEST REPORT

### BLOOD - BIOCHEMISTRY

**BILIRUBIN - TOTAL** : 6.10 mg/dl

0.3 - 1.2 mg/dl

Method : Colometric endpoint Diazo

**BILIRUBIN - DIRECT** : 4.86 mg/dl

< 0.2 mg/dl

Method : Colometric endpoint Diazo

**S.G.O.T. (AST)** : 211.0 U/l

Male : Upto 38 U/L

Method : IFCC/Kinetic

Female : Upto 32 U/L

**S.G.P.T. (ALT)** : 298.0 U/l

Male : Upto 41 U/L

Method : IFCC/Kinetic

Female : Upto 31 U/L

**ALKALINE PHOSPHATASE** : 168.0 IU/L

Method : P-NPP/IFCC

Children	Male(U/L)	Female(U/L)
1 - 30 Days	75- 316	48- 406
30Days-1yr	82- 383	124- 341
1yr-3yrs	104- 345	108- 317
4yrs-6yrs	93- 309	96- 297
7YRS-9YRS	86- 315	69- 325
10YRS-12YRS	42- 362	51- 332
13YRS-15YRS	74- 390	50- 162
16YRS-17YRS	52- 171	47- 119

ADULT MALES : 40-130 U/L

ADULT FEMALES : 35-105 U/L

Mrs. Malini Parsuraman M.Sc.,  
Chief Biochemist

Dr. Radhi Lawrence AB (Path)  
Chief Pathologist

Dr. R. Rani MBBS, DCP, DNB  
Hemato Pathologist

Dr. Sp. Ganesan MBBS, DCP  
Medical Director

PLEASE SEE REVERSE FOR MORE INFORMATION



# HITECH DIAGNOSTIC CENTRE

Multi Speciality Reference Laboratory

**Central Lab**  
1, Millers Road, Kilpauk, Chennai-10.  
Tel : 4291 9999

**CT Scan, LAB & Molecular Diagnostics**  
13, Dr. Nair Road, T.Nagar, Chennai-17  
Tel : 4293 8200



Web : [www.hitechlabsindia.com](http://www.hitechlabsindia.com)

MYLAPORE 4207 4934	SALIGRAMAM 4554 2183	ANNA NAGAR 4261 2741	TAMBARAM 4315 9190	WASHERMENPET 4204 9452	MKB NAGAR 2552 0015	AMBATTUR 4208 6905	PERAVALLUR 4278 9603	VILLIVAKKAM 4355 4801	TRIPPLICANE 4351 8505	ADYAR 4558 7973	MADIPAKKAM 2247 5071	PALAVAKKAM 2451 4291
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Patient : P0018754 **Mrs. SUBBU LAKSHMI (27/F)**

SID.No. : **005471**

Branch : **PALAYAMKOTTAI**

SID Date : 10/09/2012

Reg Time : 11:55:30

Rpt Date : 22/09/2012

Rpt Time : 08:43:30

Page # : 2

Copy of the report

Test	Result	Reference Value
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ANTI HAV IgM : NEGATIVE  
Method : CLIA

ANTI HAV IgG : NEGATIVE  
Method : CLIA

HBs Ag (AUSTRALIA ANTIGEN) : NEGATIVE  
Method : CLIA -ARCHITECT

ANTI HEV IgM : POSITIVE  
Method : ELISA

DR. SP. GANESAN. MBBS., DCP.,

**\* End Of Report \***

*" Our Kilpauk Lab Serves You Round The Clock "*

*Hitech now has CT Scan service at T.Nagar, from Rs.900. Contact 4293 8213.*

Mrs. Malini Parsuraman M.Sc.,  
Chief Biochemist

Dr. Radhi Lawrence AB (Path)  
Chief Pathologist

Dr. R. Rani MBBS, DCP, DNB  
Hemato Pathologist

Dr. Sp. Ganesan MBBS, DCP  
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Patient : P0019387 **Mr. SAMBATH (46/M)**

SID.No. : **006135**

SID Date : 02/10/2012

Branch : **PALAYAMKOTTAI**

Reg Time : 12:20:57

Referrer : **GOVERNMENT SIDDHA HOSPITAL.**

Rpt Date : 02/10/2012

Address :  
PALAYAMKOTTAI  
TIRUNELVELI

Rpt Time : 13:16:16

Page # : 1

**Final Report**

Source : **DR.M. ARUNVANAN**

Test	Result	Reference Value
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Sample collected and sent

## TEST REPORT

### LIVER FUNCTION TESTS

#### BLOOD - BIOCHEMISTRY

**BILIRUBIN - TOTAL : 6.50 mg/dl**

Method : Colometric endpoint Diazo

Neonates(Premature)

1 Day : < 6.0 mg/dl

2 Day : < 8.0 mg/dl

3 - 5 days : < 15.0 mg/dl

Neonates(Fullterm)

1 Day : < 6.0 mg/dl

2 Day : < 7.0 mg/dl

3 -5Days : < 12.0 mg/dl

Adult : 0.3-1.2 mg/dl

**BILIRUBIN - DIRECT : 4.80 mg/dl**

Method : Colometric endpoint Diazo

< 0.2 mg/dl

**BILIRUBIN - INDIRECT : 1.7 mg/dl.**

Method : Calculation

**S.G.O.T. (AST) : 59.0 U/l**

Method : IFCC/Kinetic

Premature : Upto 64 U/L

1 day : Upto 122 U/L

2-5 Days : Upto 110 U/L

6 days- 6 Months : Upto 84 U/L

7 - 12 Months : Upto 89 U/L

1 - 3 yrs : Upto 56 U/L

4 - 6 yrs : Upto 52 U/L

7 - 12 yrs : Upto 51 U/L

13 - 17 yrs Male : Upto 35 U/L

13 - 17 yrs Female: Upto 27 U/L

Adult :-

Male : Upto 38 U/L

Female : Upto 32 U/L

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Chief Pathologist

Dr. R. Rani MBBS, DCP, DNB  
Hemato Pathologist

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Certified  
Organisation

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Patient : P0019387 **Mr. SAMBATH (46/M)**

SID.No. : **006135**

Branch : **PALAYAMKOTTAI**

SID Date : 02/10/2012

Reg Time : 12:20:57

Rpt Date : 02/10/2012

Rpt Time : 13:16:16

Page # : 2

Source : **DR.M.ARUNVANAN**

**Final Report**

Test	Result	Reference Value
<b>S.G.P.T. (ALT)</b>	<b>: 163.0 U/l</b>	Premature : Upto 28 U/L
Method : IFCC/Kinetic		1 day : Upto 31 U/L
		2-5 Days : Upto 52 U/L
		6 days- 6 Months : Upto 60 U/L
		7 - 12 Months : Upto 57 U/L
		1 - 12 yrs : Upto 39 U/L
		13 - 17 yrs Male : Upto 26 U/L
		13 - 17 yrs Female: Upto 23 U/L
		Adult :-
		Male : Upto 41 U/L
		Female : Upto 31 U/L
<b>ALKALINE PHOSPHATASE</b>	<b>: 147.0 IU/L</b>	Children
Method : P-NPP/IFCC		1 - 30 Days
		30Days-1yr
		1yr-3yrs
		4yrs-6yrs
		7YRS-9YRS
		10YRS-12YRS
		13YRS-15YRS
		16YRS-17YRS
		Male(U/L) Female(U/L)
		75- 316 48- 406
		82- 383 124- 341
		104- 345 108- 317
		93- 309 96- 297
		86- 315 69- 325
		42- 362 51- 332
		74- 390 50- 162
		52- 171 47- 119
		ADULT MALES : 40-130 U/L
		ADULT FEMALES : 35-105 U/L

## A/G RATIO

Total Proteins	: 7.4 gm/dl	6.6 - 8.7
Albumin	: 4.3 gm/dl	3.5 - 5.2
Globulin	: 3.1 gm/dl	2.3 - 3.5
A/G Ratio	: 1.4	
<b>GAMMA GT (GGTP)</b>	<b>: 291.0 U/l</b>	MALE : < 60 U/l
Method : IFCC - Enzymatic Colorimetric		FEMALE : < 40 U/l
		Children
		Male(U/L) Female(U/L)
		1 - 182 Days 12 - 122 15 - 132
		183 - 365 Days 1 - 39 1 - 39
		1 - 12 Yrs 3 - 22 4 - 22
		13 - 18 Yrs 2 - 42 4 - 24

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SID.No. : **006135**

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SID Date : 02/10/2012

Reg Time : 12:20:57

Rpt Date : 02/10/2012

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Page # : 3

Source : **DR.M.ARUNVANAN**

**Final Report**

Test	Result	Reference Value
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ANTI HAV IgM : NEGATIVE

Method : CLIA

ANTI HAV IgG : POSITIVE

Method : CLIA

HBs Ag (AUSTRALIA ANTIGEN) : NEGATIVE

Method : CLIA -ARCHITECT

ANTI HEV IgM : NEGATIVE

Method : ELISA

DR. SP. GANESAN. MBBS., DCP.,

**\* End Of Report \***

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**JUDGE JOSEPH CLINICAL LAB**  
**St.Xavier's College(Autonomous)**  
**ALUMNI/AE ASSOCIATION**

**Palayamkottai**

**CLINICAL REPORT**

<b>Patient Name</b>	<b>Mr. Sambath</b>	<b>Lab Id</b>	<b>21016</b>
<b>Age /Sex</b>	<b>45 / Male</b>	<b>Date</b>	<b>01/Oct/2012</b>
<b>Ref by</b>	<b>Dr. S.K. Sasi</b>	<b>Page</b>	<b>Page 1 of 1</b>

<b>Test Name</b>	<b>Result</b>	<b>Refrence Range</b>
------------------	---------------	-----------------------

**BIO-CHEMISTRY**

Billirubin Total	7.9 mg/dl	UP to 1.0
Billirubin - Direct	4.1 mg/dl	0.0 - 0.3 mg/dl
Billirubin - Indirect	3.8 mg/dl	
Sugar (R)	108 mg/dl	70 to 140 mg/dl

**URINE**

Bile Salt	Positive
Bile Pigments	Positive

**Technician Id**

**For Judge Joseph Clinical Lab**

Name : Mr. P N DURAL  
PID No. : SUD: 52  
SID No. : 1001: 03285  
Age / Sex : 34 Year(s) / Male  
Ref. Dr : C/O. JH

Register On : 17/09/2012 6:36 AM  
Collection On : 17/09/2012 6:52 AM  
Report On : 17/09/2012 7:37 AM  
Printed On : 17/09/2012 7:38 AM  
OP / IP : OP

## REPORT

<u>Investigations</u>	<u>Observed Values</u>	<u>Unit</u>	<u>Biological Reference Interval</u>
-----------------------	------------------------	-------------	--------------------------------------

### HAEMATOLOGY

Haemoglobin (Blood/Automated Blood c. I Counter)	16.5	g/dl	14.0-17.2
PCV (Packed Cell Volume) / Haematocrit (Blood/Automated Blood c. II Counter)	61.0	%	40.7-50.3
RBC Count (Blood/Automated Blood c. I Counter)	6.66	million cells/cu. mm	4.5-5.7
Platelet Count (Blood/Automated Blood c. II Counter)	246	103/uL	150 - 400
Total WBC Count (TC) (Blood/Automated Blood c. I Counter)	6,880	cells/cu. mm	5000 - 10000

### BIOCHEMISTRY

#### Liver function test

Bilirubin(Total) (Serum/Diazotized Sulfanilic Acid)	6.1 ✓	mg/dL	0.1 - 1.2
Bilirubin(Direct) (Serum/Diazotized Sulfanilic Acid)	4.2	mg/dL	0.0 - 0.3
Bilirubin(Indirect) (Serum/Derived)	1.90	mg/dL	0.1 - 0.7

The results pertain to sample tested.

Page 1 of 2

  
Laboratory Technologist

Name : Mr. PON DURAI  
PID No. : SUD3330  
SID No. : 100103255  
Age / Sex : 34 Year(s) / Male  
Ref. Dr : C/O. CASH

Register On : 15/09/2012 5:52 AM  
Collection On : 15/09/2012 6:59 AM  
Report On : 15/09/2012 7:16 AM  
Printed On : 15/09/2012 7:16 AM  
OP / IP : OP

## REPORT

<u>Investigations</u>	<u>Observed Values</u>	<u>Unit</u>	<u>Biological Reference Interval</u>
-----------------------	------------------------	-------------	--------------------------------------

### SEROLOGY

HBsAg - Rapid Test -Qualitative  
Result  
(Serum)

Negative

Negative

### Leptospira Antibody IgG & IgM

Leptospira Antibody - IgM  
(Serum)

Negative

U/mL

Negative : < 15  
Equivocal : 15 - 20  
Positive : > 20

Leptospira Antibody - IgG  
(Serum)

Negative


U/mL

Negative : < 5  
Equivocal : 5 - 9  
Positive : > 9

-- End of Report --

The results pertain to sample tested.

Page 1 of 1

  
Laboratory Technologist



Name : Mr. PON DURAI  
PID No. : SUD3590  
SID No. : 1001203323  
Age / Sex : 34 Year(s) / Male  
Ref. Dr : C/O. SSH

Register On : 19/09/2012 5:30 AM  
Collection On : 19/09/2012 6:08 AM  
Report On : 21/09/2012 3:57 PM  
Printed On : 22/09/2012 7:56 PM  
OP / IP : OP

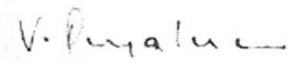
### LABORATORY REPORT

<u>Investigations</u>	<u>Observed Values</u>	<u>Unit</u>	<u>Biological Reference Interval</u>
<b><u>SEROLOGY</u></b>			
<b>Anti HAV IgM Antibody</b> (Serum/ELFA (Enzyme Linked Fluorescent Assay))	Negative(0.02)	mIU/mL	Negative : < 0.4 Equivocal: >= 0.4 to < 0.5 Positive : >= 0.5
<b>Anti HEV IgM Antibody</b> (Serum/Enzyme Linked Immunosorbent Assay)	Positive		Negative

-- End of Report --

*The results pertain to sample tested.*

Page 1 of 1

  
Dr. V. Pugalendi,  
Consultant Biochemist

Name : Mr. PON DURAI  
PID No. : SUD3613  
SID No. : 1001203346  
Age / Sex : 34 Year(s) / Male  
Ref. Dr : C/O. SSH

Register On : 21/09/2012 6:04 AM  
Collection On : 21/09/2012 6:47 AM  
Report On : 21/09/2012 10:35 AM  
Printed On : 21/09/2012 10:40 AM  
OP / IP : OP

### LABORATORY REPORT

<u>Investigations</u>	<u>Observed Values</u>	<u>Unit</u>	<u>Biological Reference Interval</u>
<b><u>BIOCHEMISTRY</u></b>			
<b><u>Liver function test</u></b>			
<b>Bilirubin(Total)</b> (Serum/Diazotized Sulfanilic Acid)	7.8	mg/dL	0.1 - 1.2
<b>Bilirubin(Direct)</b> (Serum/Diazotized Sulfanilic Acid)	4.7	mg/dL	0.0 - 0.3
<b>Bilirubin(Indirect)</b> (Serum/Derived)	3.10	mg/dL	0.1 - 0.7
<b>SGOT/AST (Aspartate Aminotransferase)</b> (Serum/IFCC / Kinetic)	105	U/L	Upto 35
<b>SGPT/ALT (Alanine Aminotransferase)</b> (Serum/IFCC / Kinetic)	35	U/L	Upto 40
<b>Alkaline Phosphatase (SAP)</b> (Serum/PNPP / Kinetic)	119	U/L	Women 64 - 306 Men 80 - 306 Childrer upto 15 yrs <=644 Children upto 17 yrs <=483
<b>Total Protein</b> (Serum/Biuret)	6.4	gm/dL	6.2 - 8.0
<b>Albumin</b> (Serum/Bromocresol green)	3.3	gm/dL	3 - 5
<b>Globulin</b> (Serum/Derived)	3.10	gm/dL	2 - 5

*The results pertain to sample tested.*

Page 1 of 2

Laboratory Technologist





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-----------------------	-------------------------	-------------------------	-----------------------	---------------------------	-----------------------	-------------------------	--------------------------	--------------------------	--------------------	-------------------------

Patient : P0016838 **Mr. KARUPPASAMY (43/M)**

SID.No. : **003544**

SID Date : 05/07/2012

Branch : **PALAYAMKOTTAI**

Reg Time : 12:04:33

Referrer : **GOVERNMENT SIDDHA HOSPITAL.**

Rpt Date : 07/07/2012

Address :  
PALAYAMKOTTAI  
TIRUNELVELI

Rpt Time : 17:36:42

Page # : 1

**Final Report**

Source : **DR. ARUN VANAN.,**

Test	Result	Reference Value
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Sample collected and sent

## TEST REPORT

### **BLOOD - SEROLOGY**

LEPTOSPIRA BY MSAT : **NEGATIVE**

### **LIVER FUNCTION TESTS**

### **BLOOD - BIOCHEMISTRY**

BILIRUBIN - TOTAL : **9.00 mg/dl** 0.3 - 1.2 mg/dl

Method : Colometric endpoint Diazo

BILIRUBIN - DIRECT : **5.20 mg/dl** < 0.2 mg/dl

Method : Colometric endpoint Diazo

BILIRUBIN - INDIRECT : **3.80 mg/dl**

Method : Calculation

S.G.O.T. (AST) : **59.1 U/l** Male : Upto 38 U/L

Method : IFCC/Kinetic Female : Upto 32 U/L

S.G.P.T. (ALT) : **250.0 U/l** Male : Upto 41 U/L

Method : IFCC/Kinetic Female : Upto 31 U/L

ALKALINE PHOSPHATASE : **49.6 IU/L**

Method : P-NPP/IFCC

Children	Male (U/L)	Female (U/L)
1 - 30 Days	75- 316	48- 406
30Days-1yr	82- 383	124- 341
1yr-3yrs	104- 345	108- 317
4yrs-6yrs	93- 309	96- 297
7YRS-9YRS	86- 315	69- 325
10YRS-12YRS	42- 362	51- 332
13YRS-15YRS	74- 390	50- 162
16YRS-17YRS	52- 171	47- 119

ADULT MALES : 40-130 U/L

ADULT FEMALES : 35-105 U/L

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Patient : P0016838 **Mr. KARUPPASAMY (43/M)**

SID.No. : 003544

SID Date : 05/07/2012

Branch : PALAYAMKOTTAI

Reg Time : 12:04:33

Rpt Date : 07/07/2012

Rpt Time : 17:36:42

Page # : 2

Source : DR. ARUN VANAN.,

**Final Report**

Test	Result	Reference Value
<b>A/G RATIO</b>		
Total Proteins	: 6.9 gm/dl	6.6 - 8.7
Albumin	: 2.5 gm/dl	3.5 - 5.2
Globulin	: 4.4 gm/dl	2.3 - 3.5
A/G Ratio	: 0.6	
GAMMA GT (GGTP)	: 46.5 U/l	MALE : < 60 U/l FEMALE : < 40 U/l
Method : IFCC - Enzymatic Colorimetric		Children Male(U/L) Female(U/L)
		1 - 182 Days 12 - 122 15 - 132
		183 - 365 Days 1 - 39 1 - 39
		1 - 12 Yrs 3 - 22 4 - 22
		13 - 18 Yrs 2 - 42 4 - 24

## HEPATITIS PANEL

### BLOOD - SEROLOGY

ANTI HAV IgM	: NEGATIVE	
Method : CLIA		
ANTI HAV IgG	: 13.03 S/CO	Less than 1.0 S/CO : Negative More than 1.0 S/CO : Positive
Method : CLIA		
HBs Ag (AUSTRALIA ANTIGEN)	: NEGATIVE	
Method : CLIA -ARCHITECT		
ANTI HB c IgM	: NEGATIVE	
Method : CLIA		
ANTI HB c (TOTAL)	: NEGATIVE	
Method : CLIA		
HBc Ag	: NEGATIVE	
Method : CLIA		
ANTI HBe	: NEGATIVE	
Method : CLIA		
ANTI HBs (QUANTITATIVE)	: 44.59 IU/L	Less than 10 IU/l : No immunity More than 10 IU/l : Acquired immunity

#### SUGGESTION FOR REVACCINATION :-

Anti HBs Level	REVACCINATION
After Immunisation	TO BE DONE
Less than 10 IU/l	- Immediately.
10 - 100 IU/l	- After 3 - 6 months.
100 - 1000 IU/l	- After One year

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SID.No. : **003544**

Branch : **PALAYAMKOTTAI**

SID Date : 05/07/2012

Reg Time : 12:04:33

Rpt Date : 07/07/2012

Rpt Time : 17:36:42

Page # : 3

Source : **DR. ARUN VANAN.,**

**Final Report**

Test	Result	Reference Value
Method : CLIA		1000 - 10000 IU/l - After 3 - 5 Years More than 10000 IU/l - After 7 Years.

**HDV (DELTA) Antigen : NEGATIVE**

Method : ELISA

**ANTI HEV IgM : POSITIVE**

Method : ELISA

**ANTI HCV : NEGATIVE**

Method : ELISA

**DR. SP. GANESAN. MBBS., DCP.,**

**\* End Of Report \***

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**Dr. Radhi Lawrence AB (Path)**  
Chief Pathologist

**Dr. R. Rani MBBS, DCP, DNB**  
Hemato Pathologist

**Dr. Sp. Ganesan MBBS, DCP**  
Medical Director

**PLEASE SEE REVERSE FOR MORE INFORMATION**



# HITECH DIAGNOSTIC CENTRE

Multi Speciality Reference Laboratory

**Central Lab**  
1, Millers Road, Kilpauk, Chennai-10.  
Tel : 4291 9999

**CT Scan, Lab & Corporate Health Centre**  
13, Dr. Nair Road, T.Nagar, Chennai-17  
Tel : 4293 8200

Web : [www.hitechlabsindia.com](http://www.hitechlabsindia.com)



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Patient : P0016838 **Mr. KARUPPASAMY (43/M)**

SID.No. : **003860**

Branch : **PALAYAMKOTTAI**

SID Date : 16/07/2012

Reg Time : 10:19:22

Rpt Date : 16/07/2012

Rpt Time : 15:54:16

Page # : 2

## Final Report

Test	Result	Reference Value
<b>GAMMA GT ( GGTP )</b>	<b>: 41.9 U/l</b>	MALE : < 60 U/l FEMALE : < 40 U/l
Method : IFCC - Enzymatic Colorimetric		Children Male(U/L) Female(U/L)
		1 - 182 Days 12 - 122 15 - 132
		183 - 365 Days 1 - 39 1 - 39
		1 - 12 Yrs 3 - 22 4 - 22
		13 - 18 Yrs 2 - 42 4 - 24

DR.SP.GANESAN. MBBS., DCP.,

**\* End Of Report \***

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Mrs. Malini Parsuraman M.Sc.,  
Chief Biochemist

Dr. Radhi Lawrence AB (Path)  
Chief Pathologist

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Hemato Pathologist

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**INSTITUTIONAL ETHICS COMMITTEE (I.E.C)  
GOVERNMENT SIDDHA MEDICAL COLLEGE  
PALAYAMKOTTAI**


No. 47 /IEC/GSMC/2011-12 DT. 6.6.18.

**CERTIFICATE**

This to certify that the project title PERUMANJAL NO! : A STUDY ON  
DIAGNOSTIC METHODOLOGY OF PERUMANJAL NO! THROUGH  
SIDDHA PARAMETERS BY DR.M. ARUNYANAN 32103002  
BRANCH V - NAINADOL DEPARTMENT

has been approved by the IEC on condition basis.

Name of Member secretary

  
Dr. R. KAMALAM, M.D. (S)  
6/6/18  
Signature with date

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by office)